RADFORD'S HOUSE AND BARN PLANS

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RADFORD'S

COMBINED HOUSE AND BARN PLAN BOOK

Being a complete collection of practical, economical and common sense plans of houses, barns, outbuildings, stock sheds, etc. Illustrated with over twelve hundred copper half tone plates and zinc etchings, and containing over three hundred house and barn designs.

EDITED BY

WILLIAM A. RADFORD

President of The Radford Architectural Co., Author of "The Steel Square and Its Uses," "Practical Carpentry," "The Radford American Homes," "The Radford Ideal Homes," "Lumberman's House Plan Book," "Cement Houses and How to Build Them," "Radford's Bungalow Book" and "Radford's Practical Barn Book" and the best authority in the country on all matters pertaining to the Building Industry.

PUBLISHED BY

THE RADFORD ARCHITECTURAL CO.

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Chicago

RADFORD'S

COMBINED HOUSE AND BARN BOOK

The home building instinct is one of the strongest forces in national life. If, as has been said, "the home is the bulwark of our civilization," certainly the instinct that leads men to construct beautiful habitations is the basis of it all.

The little chambered nautilus of the sea builds its circular home each year, the new always a little larger than the former, the ants labor industriously in their excavations to provide room for habitations, the birds of the air build their nests, and every animal after the manner of its kind builds a home. Man, the king of all, merely follows the law of all creation in fashioning for himself beautiful habitations, and he goes a step further even in building beautiful structures for the housing of the horses, the cattle, the sheep and the other animals that are dependent upon his care and his bounty.

One may wonder, in glancing over the beautiful structures shown on these pages, at the marvelous advance made in home buildings even within the bounds of authentic history. It is not a difficult stretch of the imagination between the rude huts and caves of primitive man to the beautiful structures shown in this book. Yet it has been a development gradual and sure, keeping pace with the advancement of the race in right living.

In this book we have made a new departure, something never before attempted in a volume of its kind, and in that respect it will stand unique in the realm of home building literature. We refer to the feature of presenting in one volume designs for houses and for barn buildings also. It is on account of the many demands for such a book and in view of other considerations that will be explained that this has been done. Nor need it be said that many thousands of dollars have been expended to secure and to assemble this collection of structures for you. It is sufficient for you to be assured that every design in this book, whether of a house or a barn, represents the most extreme and painstaking discrimination on the part of the most expert architects in the world, and when you look upon one design herein shown you may bear in mind that it is the best

of its kind and occupies a place that might have been filled by hundreds of others that were rejected as not representative of the best in architecture.

Now, in presenting to the world a house and barn book we believe we have solved a problem for thousands of intending builders not only in rural communities but also in cities. How often do we see a fairly pretentious house of one style of architecture and back of it or at one side a barn of a totally different style. Such combinations grate upon the nerves of the beholder. There is lack of harmony and a careless disregard for that something which is pleasing to the eye. From the designs in this book the intending builder can easily select any house that pleases him and he can find a design for a barn that will harmonize with it. There is no more beautiful sight in the world than a collection of buildings either on a farm or a large city lot that are harmonious one with the other.

There is one vitally important thing we want to impress upon your mind—NEVER build without plans. Our files are filled with thousands of letters telling of the woes of the man who has attempted to build either from inaccurately drawn plans or with none at all.

The mariner who goes to sea without a chart or compass is lost.

The general who goes into battle with no plan of campaign marked out is doomed to defeat.

The business man who tries to conduct a store with no system always fails.

The engineer who runs a train on orders incorrectly given wrecks his train.

The man who builds a house or barn without plans will be beset with all manner of troubles. In nine cases out of ten he will make mistakes in the bill of materials, ordering too much or sizes that will not be correct. There will be waste of materials—shameful and needless waste. This door will not fit and that window will be askew. The floors may not be level. The time of the workmen will be wasted and there will be numerous delays occasioned by the ripping out of work that must be corrected before the building can proceed. And lastly the building, even if it is completed, will be an eye-sore, a blot on the landscape, utterly without style.

The house or the barn built after accurately drawn plans possesses a style that should be the first requisite in any building, for it is only the building with style that sells. Every builder should have in view the possibility that he may want to sell sometime, and let him put himself in the place of the buyer when building. He will buy only a building that has some individuality.

The plans in this book are drawn by the most skilled architects in the world and in every instance are faithfully accurate. Now, finally, if you want to be like the sea captain drifting in his ship helplessly at sea, like the general who strikes at the enemy in a haphazard way, like the business man who has no system or like the railroad engineer who runs his train without orders—if you would be like any of these you will build without plans. But we believe after looking over the beautiful designs in the following pages you will be impressed with the wisdom of going about your building in the only sane manner and start right—build only with accurately drawn plans.

We Illustrate in this Book

the perspective view and floor plans of over 300 moderate-priced buildings. In the preparation of this work great care has been exercised in the selection of original, practical and attractive house designs, such as seventy-five to ninety per cent of the people to-day wish to build. In drawing these plans special effort has been made to provide for the MOST ECONOMICAL CONSTRUCTION, thereby giving the home builder and contractor the benefit of the saving of many dollars; for in no case have we put any useless expense upon the building simply to carry out some pet idea. Every plan illustrated will show, by the complete working plans and specifications, that we give you designs that will work out to the best advantage and will give you the most for your money; besides every bit of space has been utilized to the best advantage.

$100.00 Plans for only $10.00

This department has for its foundation the best equipped architectural establishment ever maintained for the purpose of furnishing the public with complete working plans and specifications at the remarkably low price of only $7.00 to $15.00 per set. Every plan we illustrate has been designed by a licensed architect, who stands at the head of his profession in this particular class of work and has made a specialty of low and medium-priced houses. The price usually charged for this work is from $75.00 to $100.00.

What We Give You

The first question you will ask is, "What do we get in these complete working plans and specifications? Of what do they consist? Are they the cheap printed plans on tissue paper without details or specifications?" We do not blame you for wishing to know what you will get for your money.

Blue Printed Working Plans

The plans we send out are the regular blue printed plans, drawn one-quarter inch scale to the foot, showing all the elevations, floor plans and necessary interior details. All of our plans are printed by electricity on an electric circular blue-printing machine, and we use the very best grade of electric blue-printing paper; every line and figure showing perfect and distinct.

Foundation and Cellar Plans

This sheet shows the shape and size of all the walls, piers, footings, posts, etc., and of what materials they are constructed; shows the location of all windows, doors, chimneys, ash-pits, partitions, and the like. The different wall sections are given, showing their construction and measurements from all the different points.

Floor Plans

These plans show the shape and size of all rooms, halls and closets; the location and size of all doors and windows; the position of all plumbing fixtures, gas lights, registers, pantry work, etc., and all the measurements that are necessary are given.

Elevations

A front, right, left and rear elevation are furnished with all the plans. These drawings are complete and accurate in every respect. They show the shape, size and location of all doors, windows, porches, cornices, towers, bays, and the like; in fact, give you an exact scale picture of the house as it should be at completion. Full wall sections are given, showing the construction from foundation to roof, the height of stories between the joists, height of plates, pitch of roof, etc.

Roof Plan

This plan is furnished where the roof construction is at all intricate. It shows the location of all hips, valleys, ridges, decks, etc. All the above drawings are made to scale one-quarter inch to the foot.

Details All necessary details of the interior work, such as door and window casings and trim, base, stools, picture moulding, doors, newel posts, balusters, rails, etc., accompany each set of plans. Part is shown in full size, while some of the larger work, such as stair construction, is drawn to a scale of one and one-half inch to the foot. These blue-prints are substantially and artistically bound in cloth and heavy water-proof paper, making a handsome and durable covering and protection for the plans.

Specifications The specifications are typewritten on Lakeside Bond Linen paper, and are bound in the same artistic manner as the plans, the same cloth and water-proof paper being used. They consist of twenty-two pages of closely typewritten matter, giving full instructions for carrying out the work. All necessary directions are given in the clearest and most explicit manner, so that there can be no possibility of a misunderstanding.

Basis of Contract The working plans and specifications we furnish can be made the basis of contract between the home builder and the contractor. This will prevent mistakes, which cost money, and they will prevent disputes which are unforeseen and never settled satisfactorily to both parties. When no plans are used the contractor is often obliged to do some work he did not figure on, and the home builder often does not get as much for his money as he expected, simply because there was no basis on which to work and upon which to base the contract.

No Misunderstanding Can Arise when a set of our plans and specifications is before the contractor and the home builder, showing the interior and exterior construction of the house as agreed upon in the contract. Many advantages may be claimed for the complete plans and specifications. They are time savers, and, therefore, money savers. Workmen will not have to wait for instructions when a set of plans is left on the job. They will prevent mistakes in cutting lumber, in placing door and window frames, and in many other places where the contractor is not on the work and the men have received only partial or indefinite instructions. They also give instructions for the working of all material to the best advantage.

Free Plans for Fire Insurance Adjustment You take every precaution to have your house covered by insurance; but do you make any provision for the adjustment of the loss, should you have a fire? There is not one man in ten thousand who will provide for this embarrassing situation. You can call to mind instances in your own locality where settlements have been delayed because the insurance companies wanted some proof which could not be furnished. They demand proof of loss before paying insurance money, and they are entitled to it. We have provided for this and have inaugurated the following plan, which cannot but meet with favor by whoever builds a house from our plans.

Immediately Upon Receipt of Information from you that your house has been destroyed by fire, either totally or partially, we will forward you, free of cost, a duplicate set of plans and specifications, and in addition we will furnish an affidavit giving the number of the design and the date when furnished, to be used for the adjustment of the insurance.

Without One Cent of Cost to You and without one particle of trouble. We keep a record of the number of the house design and the date it was furnished, so that, in time of

loss, all it will be necessary for you to do is to drop us a line and we will furnish the only reliable method of getting a speedy and satisfactory adjustment. This may be the means of saving you hundreds of dollars, besides much time and worry.

Our Liberal Prices

Many have marveled at our ability to furnish such excellent and complete working plans and specification at such low prices. We do not wonder at this, because we charge but $7.00 to $15.00 for a more complete set of working plans and specifications than you would receive if ordered in the ordinary manner, and when drawn especially for you, at a cost of from seventy-five to one hundred dollars. On account of our large business and unusual equipment, and owing to the fact that WE DIVIDE THE COST of these plans among so many, it is possible for us to sell them at these low prices. The margin of profit is very close, but it enables us to sell thousands of sets of plans, which save many times their cost to both the owner and the contractor in erecting even the smallest dwelling.

Our Guarantee

Perhaps there are many who feel that they are running some risk in ordering plans at a distance. We wish to assure our customers that there is no risk whatever. If, upon receipt of these plans, you do not find them exactly as represented, if you do not find them complete and accurate in every respect, if you do not find them as well prepared as those furnished by any architect in the country, or any that you have ever seen, we will refund your money upon the return of the plans from you in perfect condition. All of our plans are prepared by architects standing at the head of their profession, and the standard of their work is the very highest. We could not afford to make this guarantee if we were not positive that we were furnishing the best plans put out in this country, even though our price is not more than one-seventh to one-tenth of the price usually charged.

Bill of Material

We do not furnish a bill of material. We state this here particularly, as some people have an idea that a bill of material should accompany each set of plans and specifications. In the first place, our plans are gotten up in a very comprehensive manner, so that any carpenter can easily take off the bill of material without any difficulty. We realize that there are hardly two sections of the country where exactly the same kinds of materials are used, and, moreover, a bill which we might furnish would not be applicable in all sections of the country. We furnish plans and specifications for houses which are built as far north as the Hudson Bay and as far south as the Gulf of Mexico. They are built upon the Atlantic and Pacific Coasts, and you can also find them in Australia and South Africa. Each country and section of a country has its peculiarities as to sizes and qualities; therefore, it would be useless for us to make a list that would not be universal. Our houses, when completed, may look the same whether they are built in Canada or Florida, but the same materials will not be used, for the reason that the customs of the people and the climatic conditions will dictate the kind and amount of materials to be used in their construction.

Estimated Cost

It is impossible for anyone to estimate the cost of a building and have the figures hold good in all sections of the country. We do not claim to be able to do it. The estimated cost of the houses we illustrate is based on the most favorable conditions in all respects, and includes everything but the plumbing and heating. We are not familiar with your local conditions, and, should we claim to know the exact cost of a building in your locality, a child would know that our statement was false. We leave this matter in the hands of the reliable contractors, for they, and they alone, know your local conditions.

We Wish to be Frank With You and therefore make no statement that we cannot substantiate in every respect. If a plan in this book pleases you; if the arrangement of the rooms is satisfactory, and if the exterior is pleasing and attractive, then we make this claim—that it can be built as cheaply as if any other architect designed it, and we believe cheaper.

We Have Studied Economy in construction, and our knowledge of all the material that goes into a house qualifies us to give you the best for your money. We give you a plan that pleases you, one that is attractive, and one where every foot of space is utilized at the least possible cost. Can any architect do more, even at seven to ten times the price we charge you for plans?

Reversing Plans We receive many requests from our patrons for plans exactly according to the designs illustrated, with the one exception of having them reversed or placed in the opposite direction. It is impossible for us to make this change and draw new plans, except at a cost of about eight times our regular price. We see no reason why our regular plans will not answer your purpose. Your carpenter can face the house exactly as you wish it, and the plans will work out as well facing in one direction as in another. We can, however, if you wish, and so instruct us, make you a reversed blue-print and furnish it at our regular price; but in that case all the figures and letters will be reversed, and, therefore, liable to cause as much confusion as if your carpenter reversed the plan himself while constructing the house.

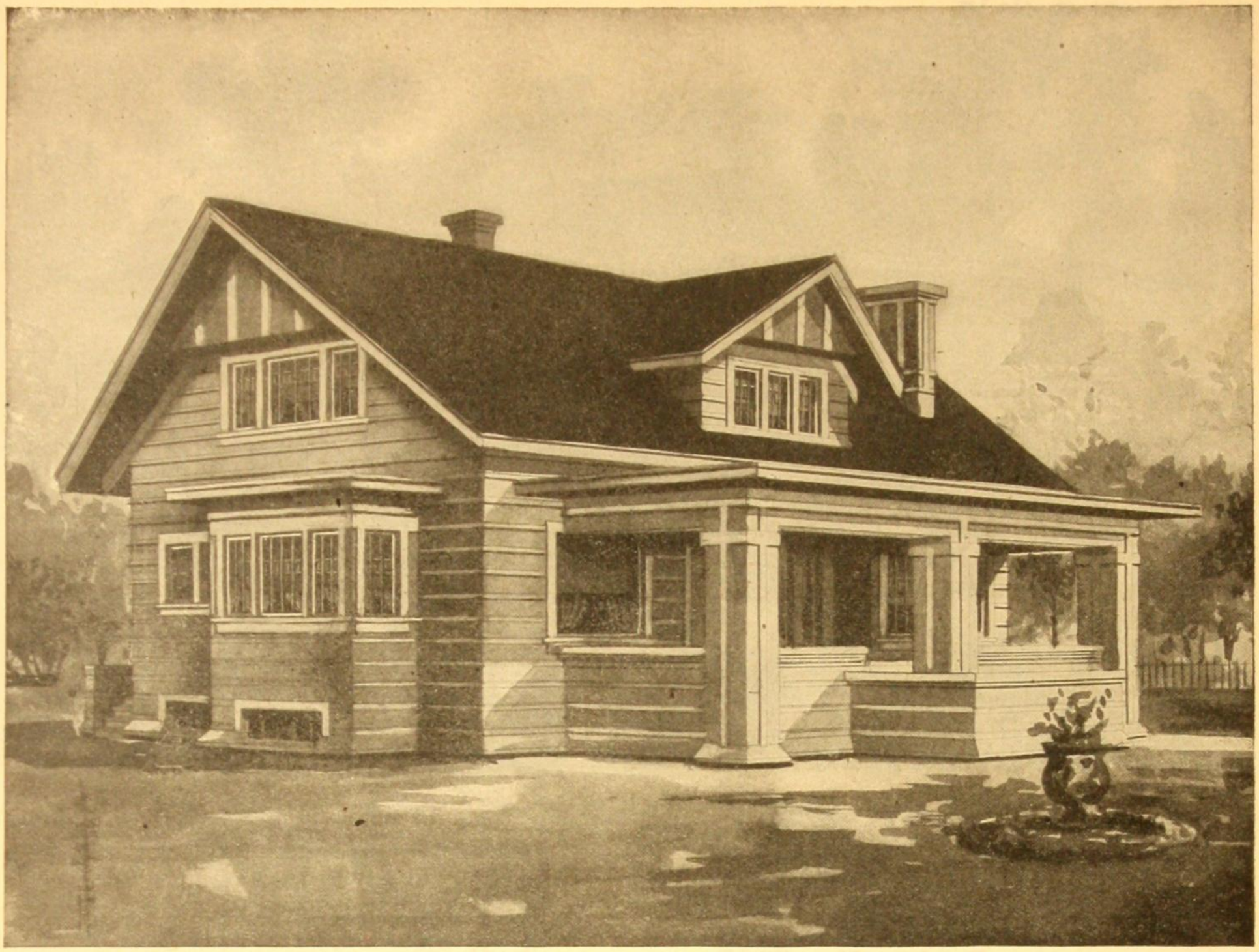
We Would Advise however, in all cases where the plan is to be reversed, and there is the least doubt about the contractor not being able to work from the plans as we have them, that two sets of blue-prints be purchased, one regular and the other reversed, and in such cases we will furnish two sets of blue-prints and one set of specifications for only fifty per cent added to the regular cost, making the $10.00 plan cost only $15.00.

Immediate Delivery Guaranteed Our equipment and facilities are such that we can send out the same day we receive order the complete plans and specifications for any house we illustrate. Delivery is made by express whenever possible, otherwise plans and specifications are forwarded by mail.

PUBLISHED BY

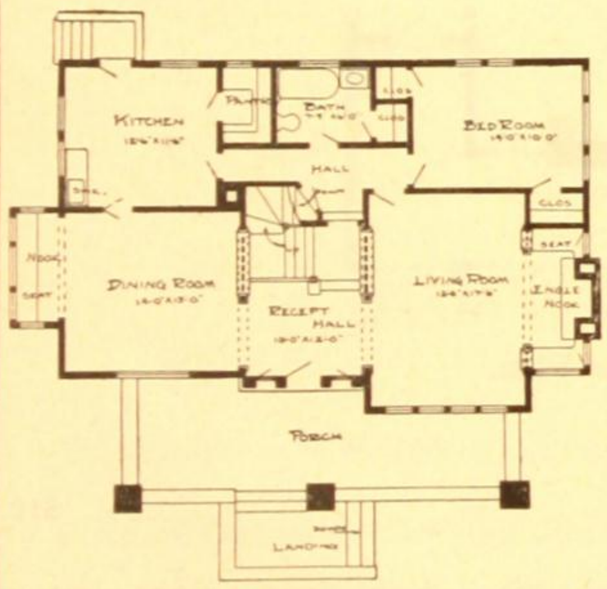
The Radford Architectural Co.

185 E. Jackson Boulevard, Chicago, Illinois



DESIGN NUMBER 6039

Size: width, 47 feet 6 inches; length, 29 feet, exclusive of porches



First Floor Plan

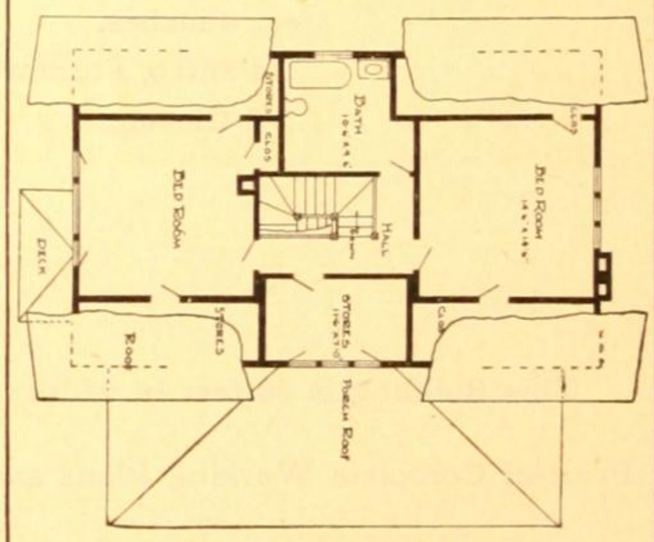
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

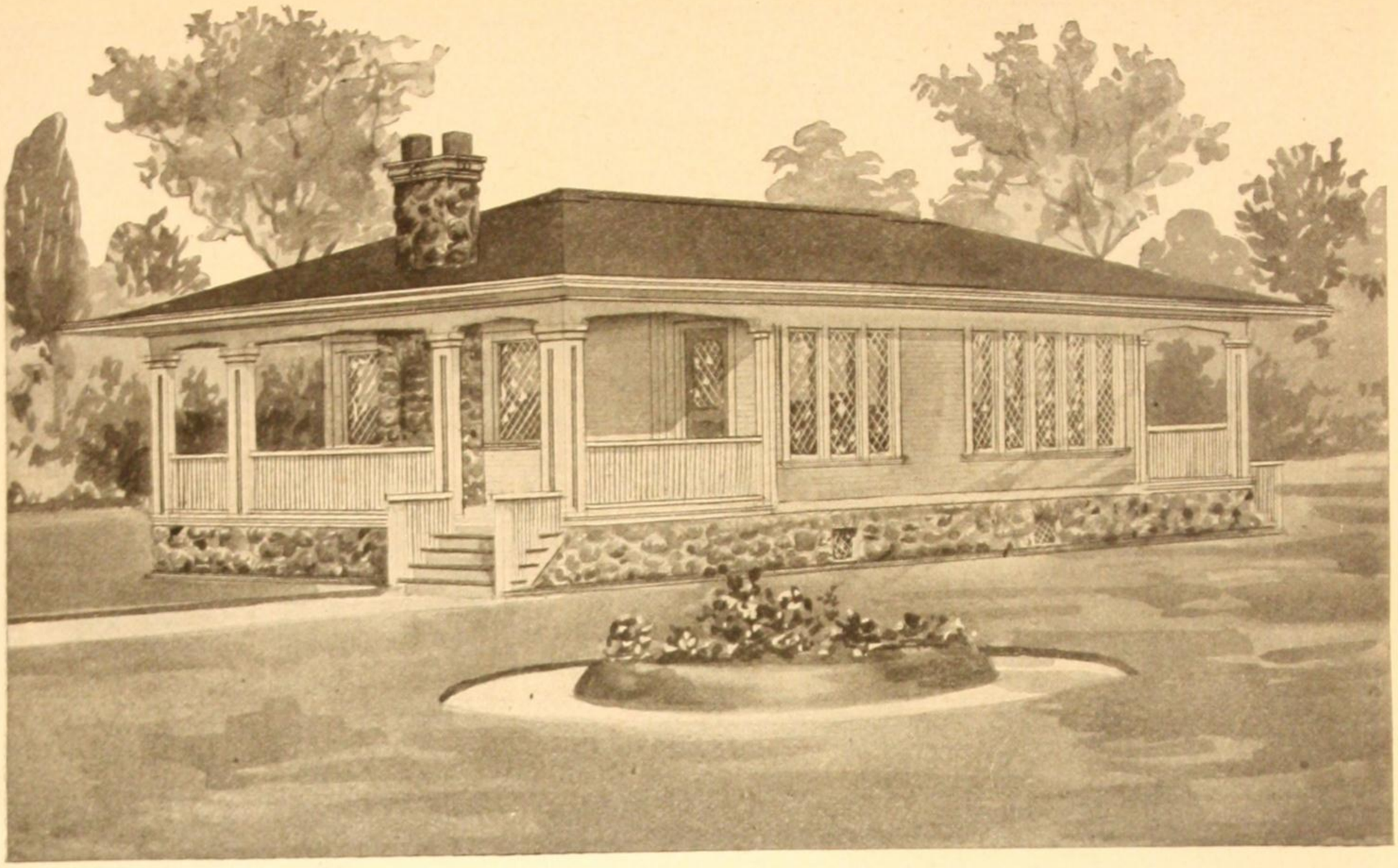
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.



Second Floor Plan



Design No. 9085

The arrangement of this House is as follows:

FLOOR PLAN.

Living Room, 14 feet by 17 feet.

Dining Room, 11 feet by 16 feet.

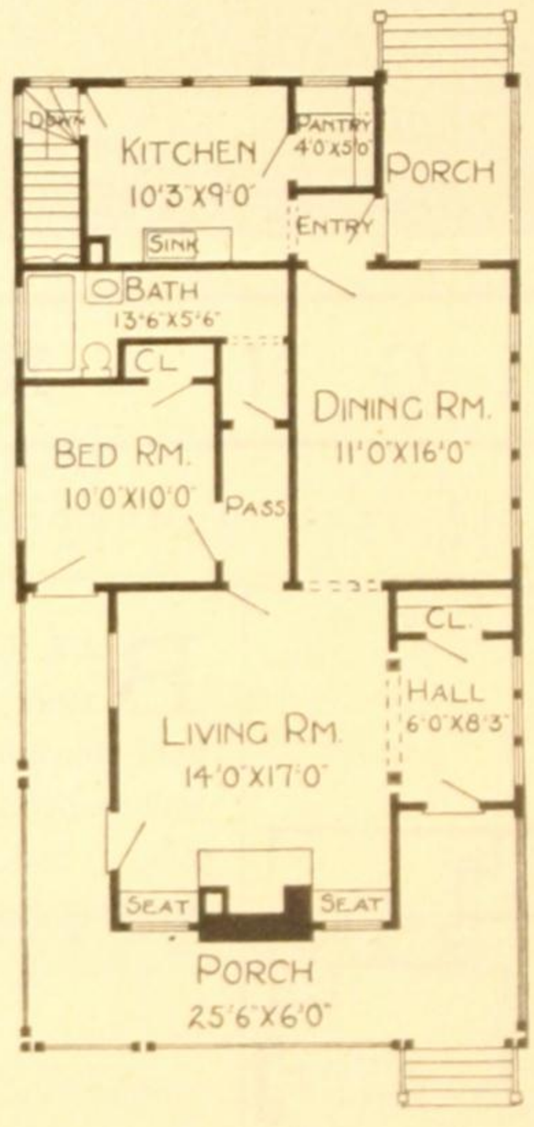
Kitchen, 10 feet 3 inches by 9 feet.

Bedroom, 10 feet by 10 feet.

Bathroom, 13 feet 6 inches by 5 feet 6 inches.

Pantry, Front and Rear Porches.

2 Closets.



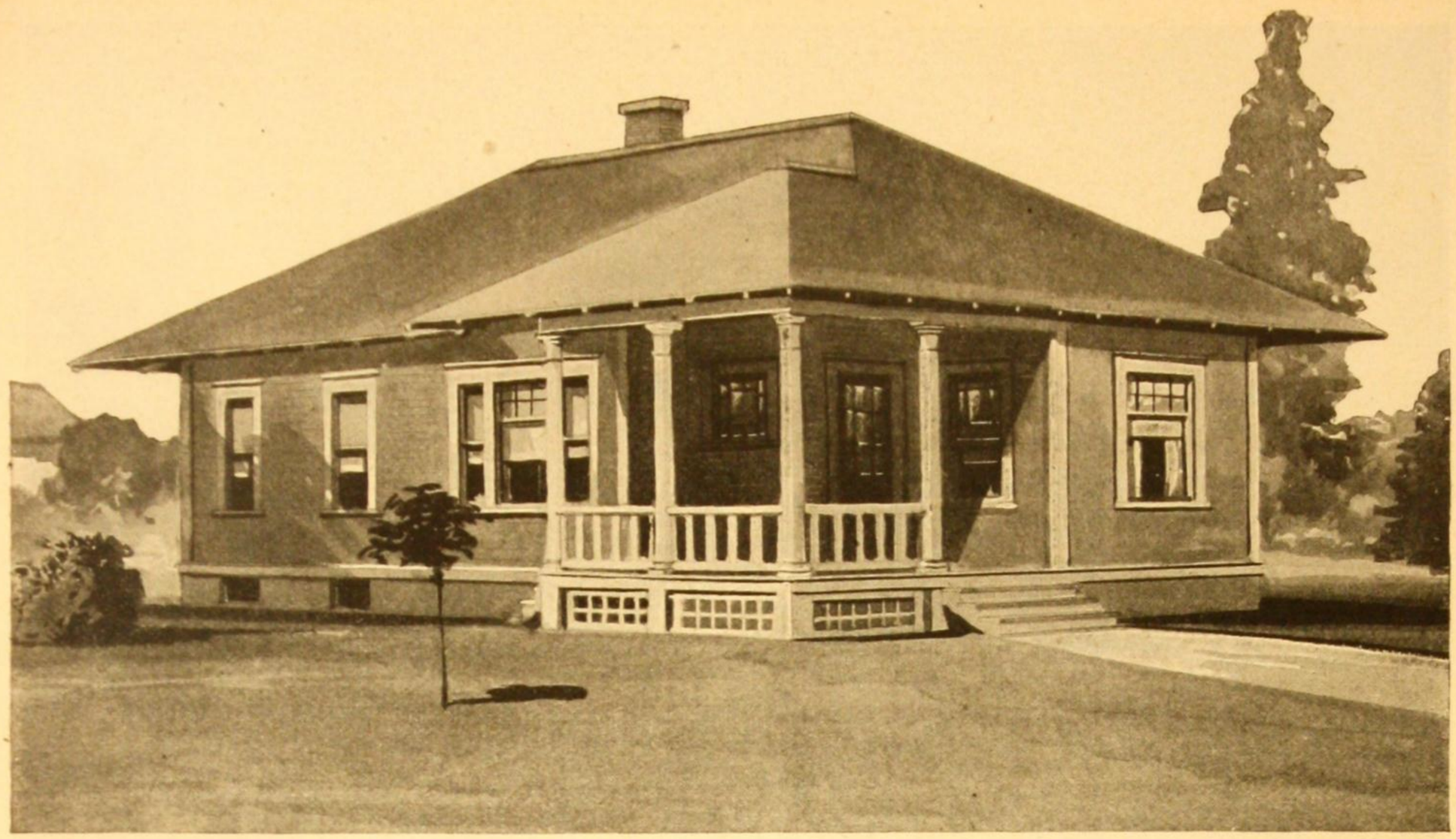
Floor Plan.

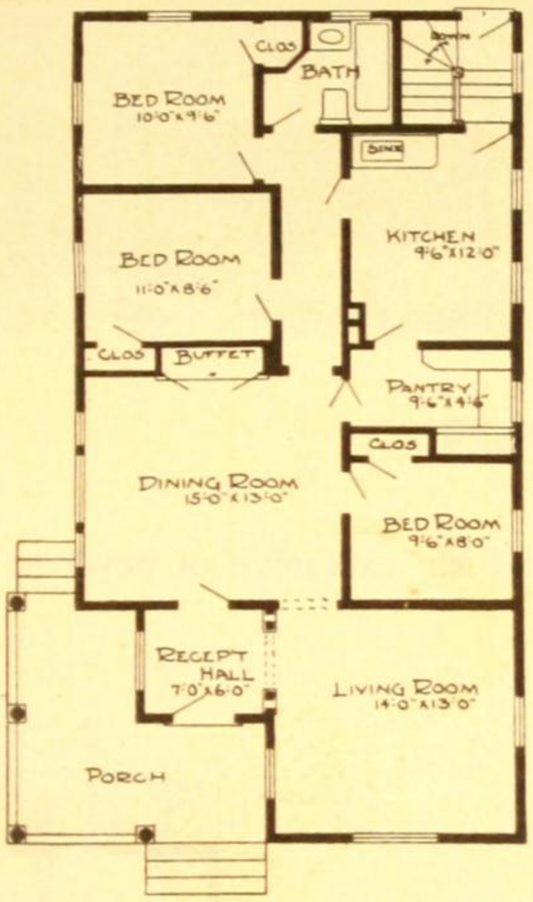
This Building is 26 feet in width; 44 feet in length.

Price of Complete Working Plans and Specifications $10.00

The Blue Printed Working Plans for this House consist of basement plan; floor plan; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.





Floor Plan

Design No. 9009

The arrangement of this House is as follows:

Reception Hall, 7 feet by 6 feet.

Living Room, 14 feet by 13 feet.

Dining Room, 15 feet by 13 feet.

Kitchen, 9 feet 6 inches by 12 feet.

..Bedroom, 11 feet by 8 feet 6 inches.

Bedroom, 10 feet by 9 feet 6 inches.

Bedroom, 9 feet 6 inches by 8 feet.

Bathroom, 7 feet 6 inches by 6 feet.

Pantry and Front Porch.

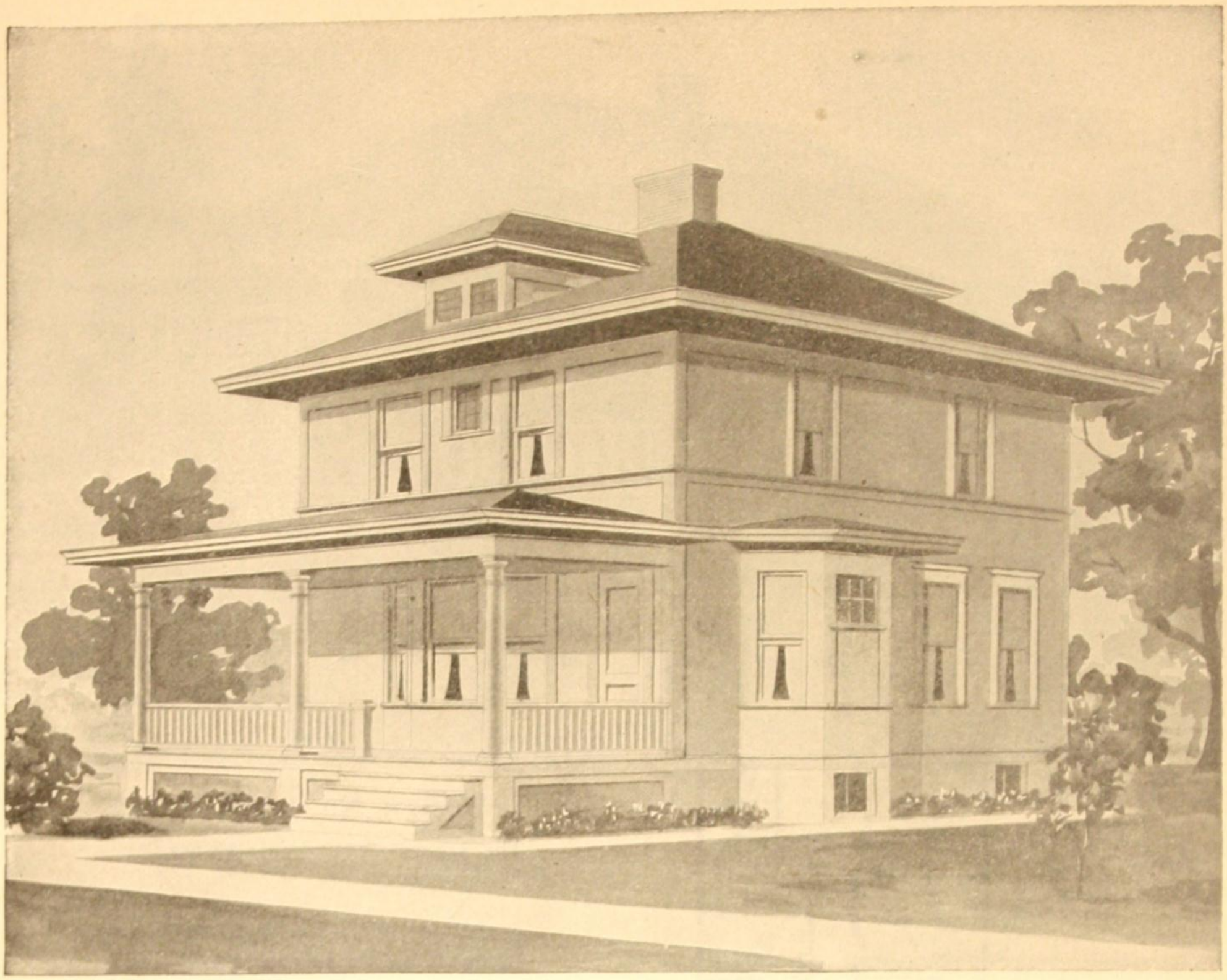
3 Closets.

This Building is 26 feet in width; 48 feet in length.

Price of Complete Working Plans and Specifications $10.00

The Blue Printed Working Plans for this House consist of basement plan; floor plan; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.



Design No. 7079

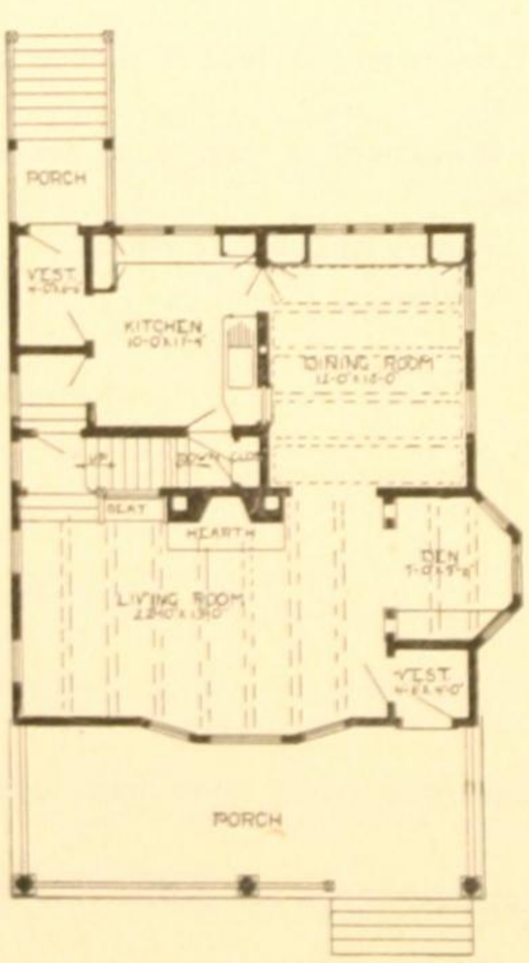
Size: Width, 28 feet; Length, 29 feet 6 inches, exclusive of porches

PRICE

of Blue Prints, together with a complete set of typewritten specifications

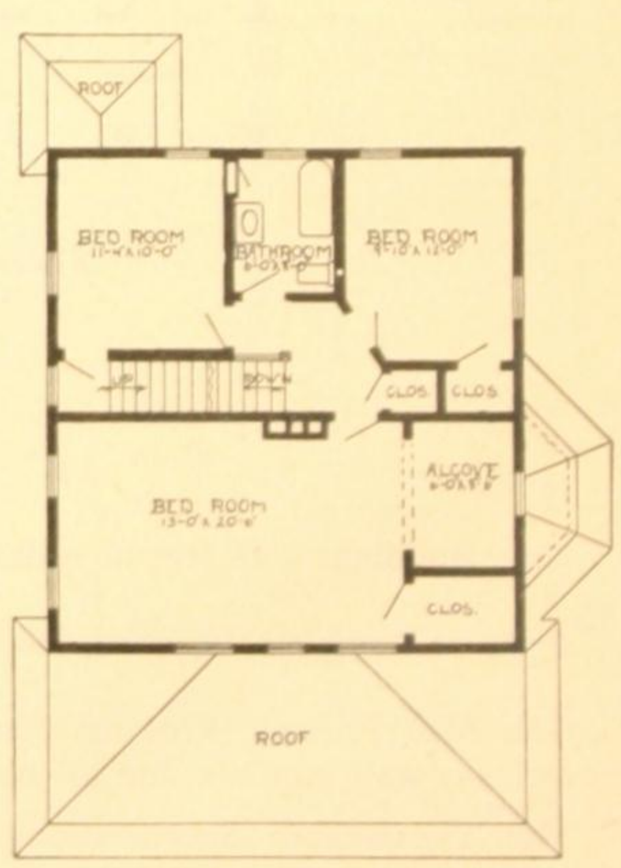
ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

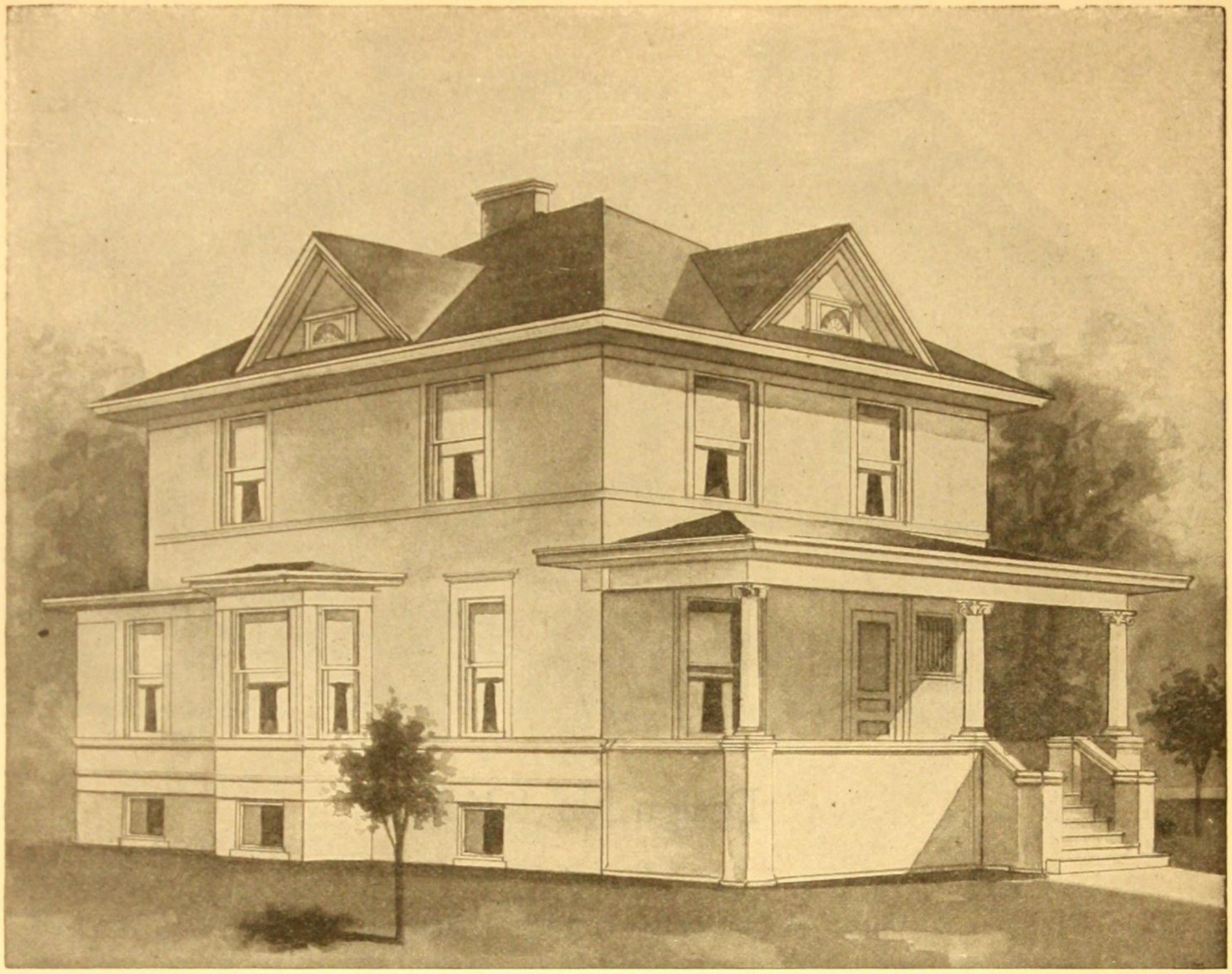


First Floor Plan

Blue prints consist of cellar and foundation plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

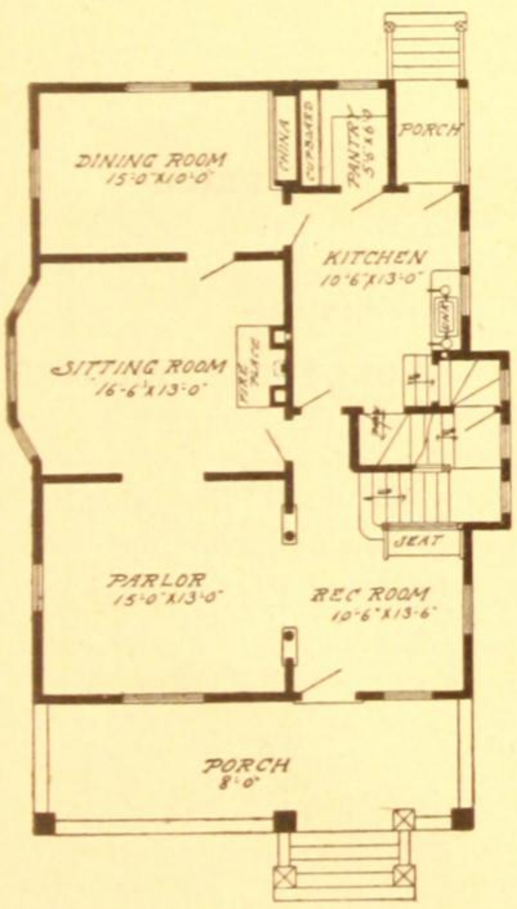


Second Floor Plan



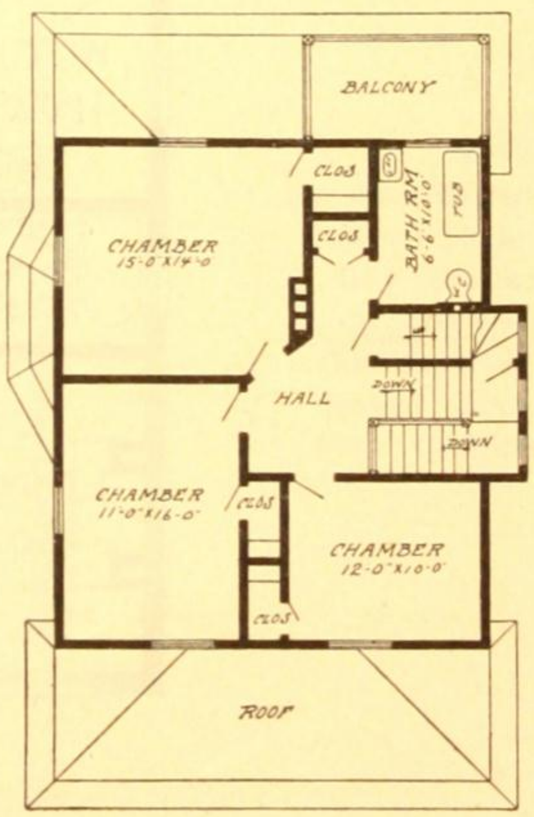
Design No. 7073

Size: Width, 31 feet; length, 38 feet, exclusive of porches



First Floor Plan.

Blue prints consist of cellar and foundation plan; roof plan; first and second floor plans; front, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



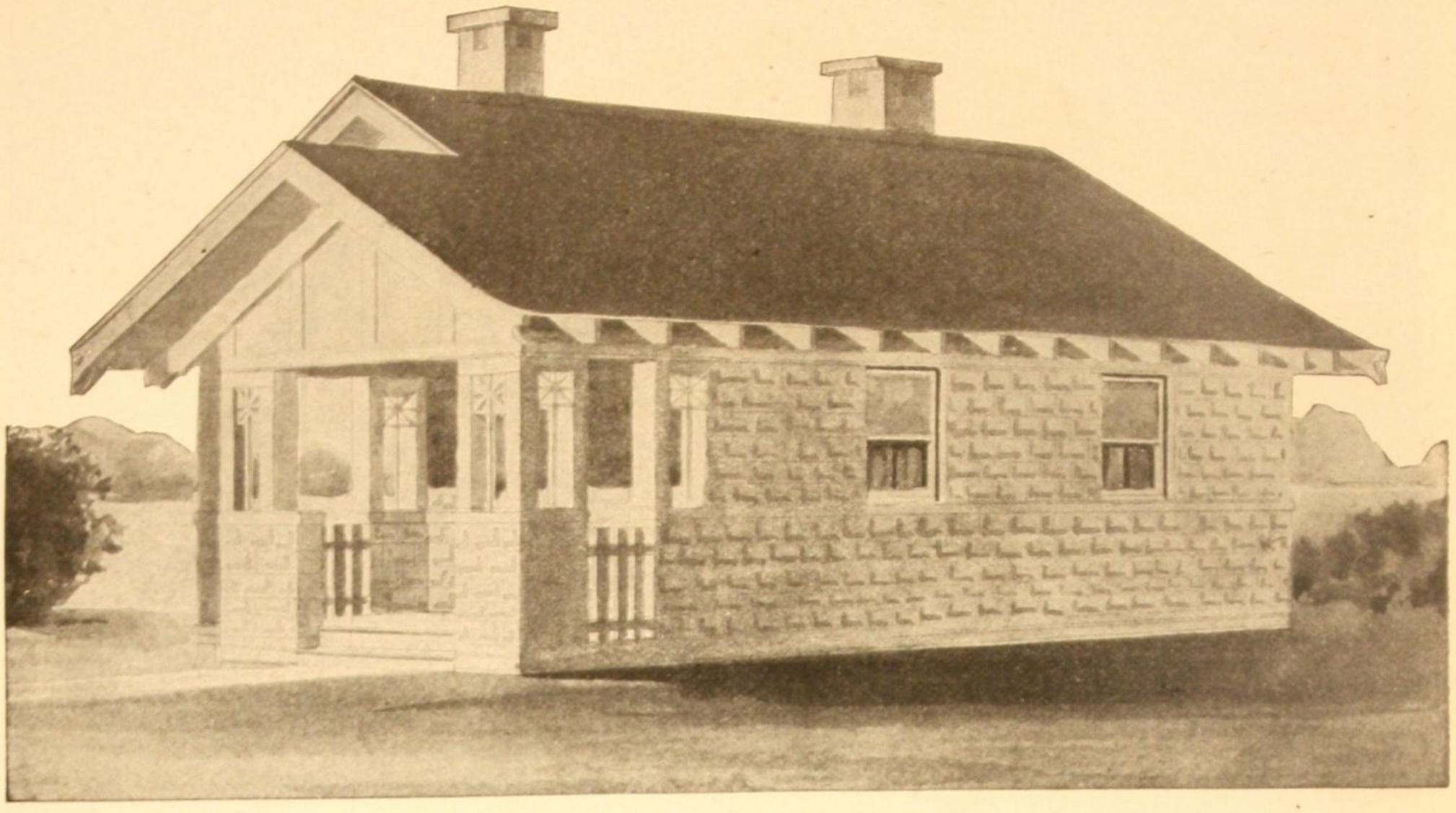
Second Floor Plan.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

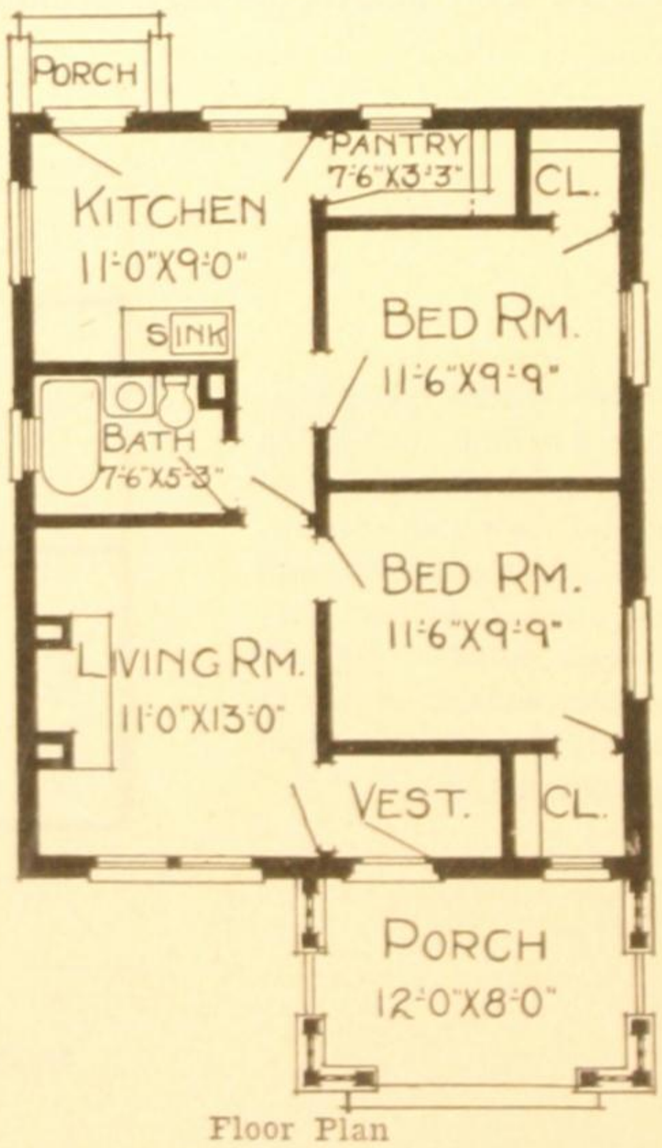
We mail Plans and Specifications the same day order is received.



Design No. 8262

Size: Width, 24 feet 8 inches; Length, 30 feet

Blue prints consist of foundation plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twelve pages of typewritten matter.



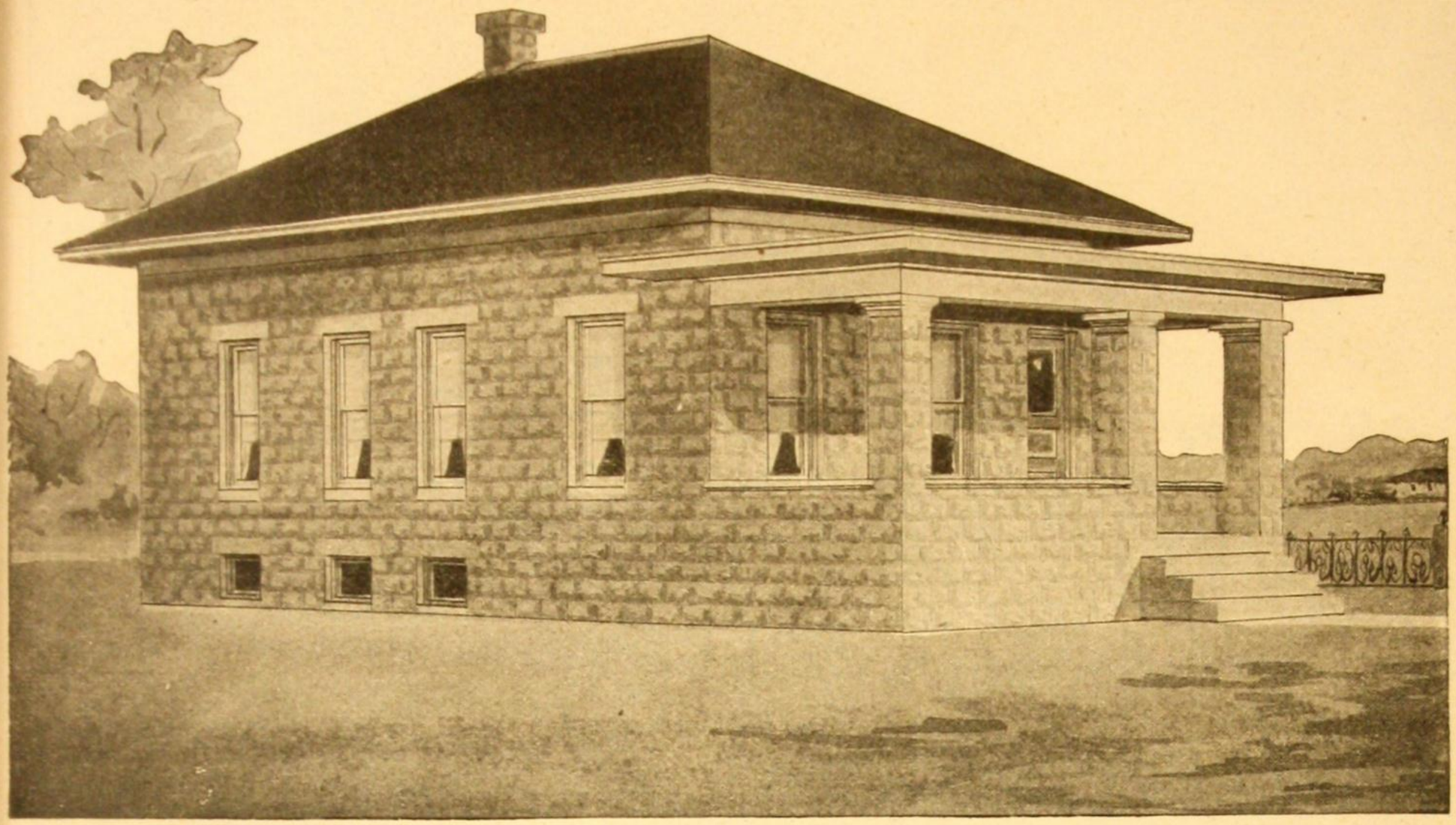
Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

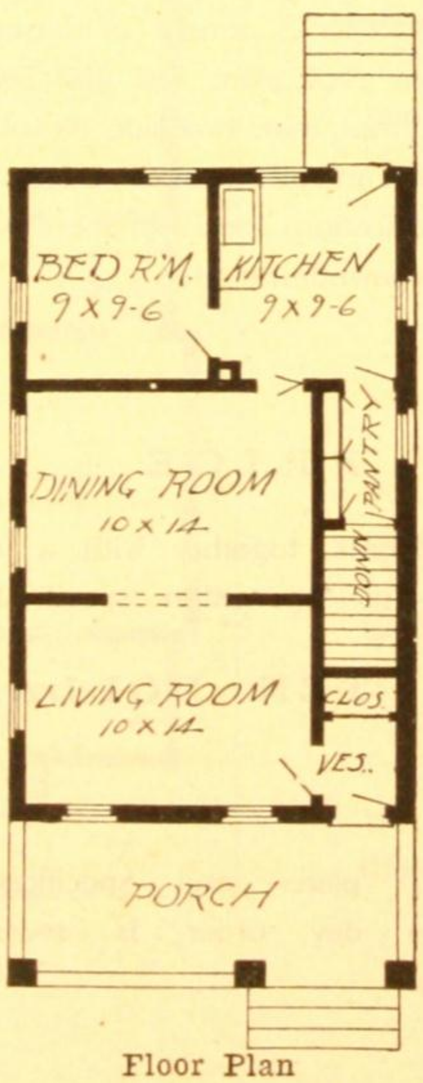
ONLY TEN DOLLARS

We mail Plans and Specifications the same day order is received.



Design No. 8195

Size: Width, 20 feet; Length, 32 feet



Floor Plan

Blue prints consist of basement plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

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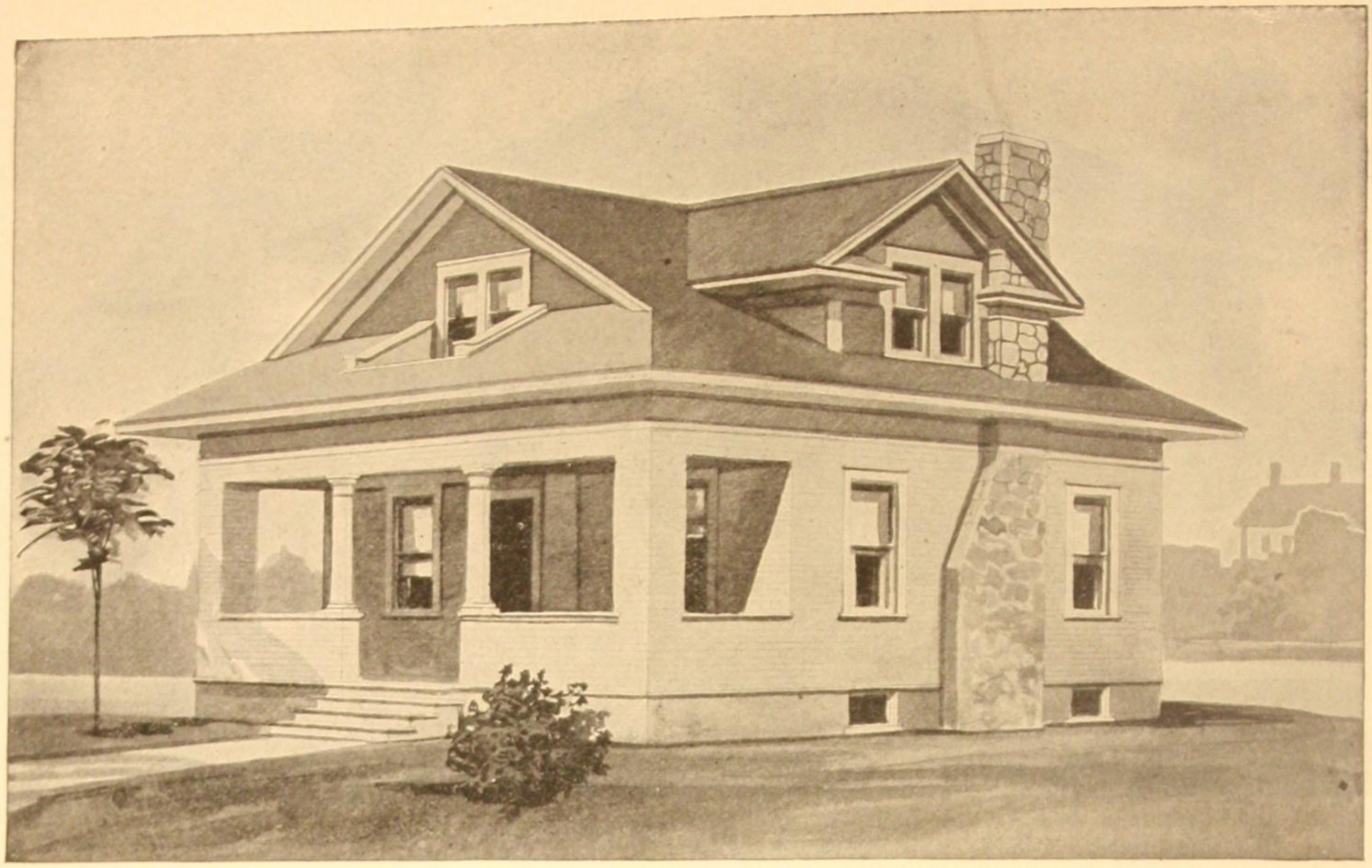
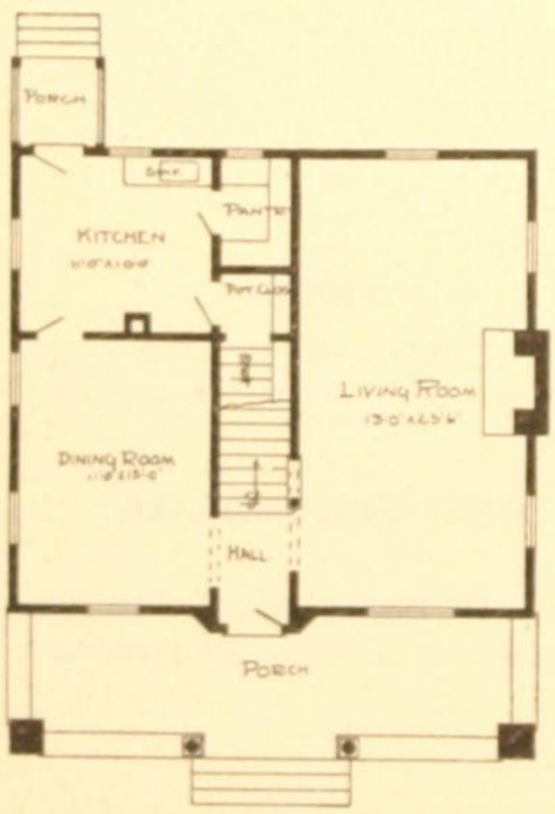


DESIGN NUMBER 6079

Size: width, 30 feet; length, 26 feet 6 inches, exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; roof plan; first and second floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

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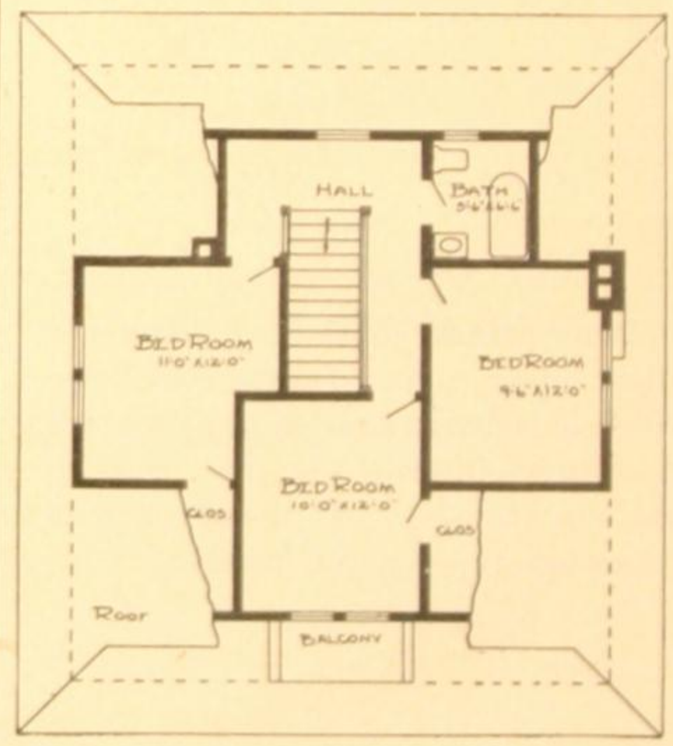
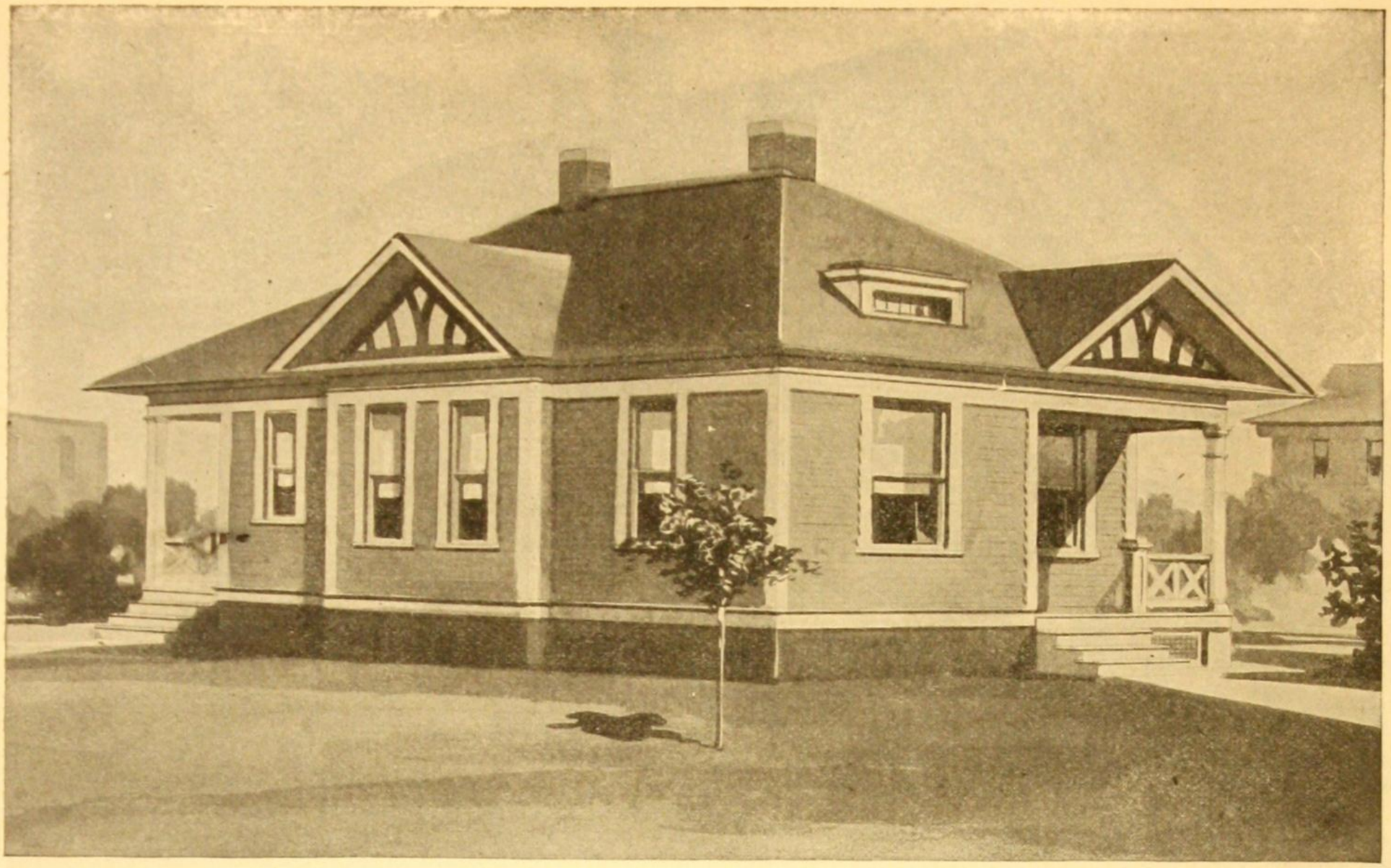
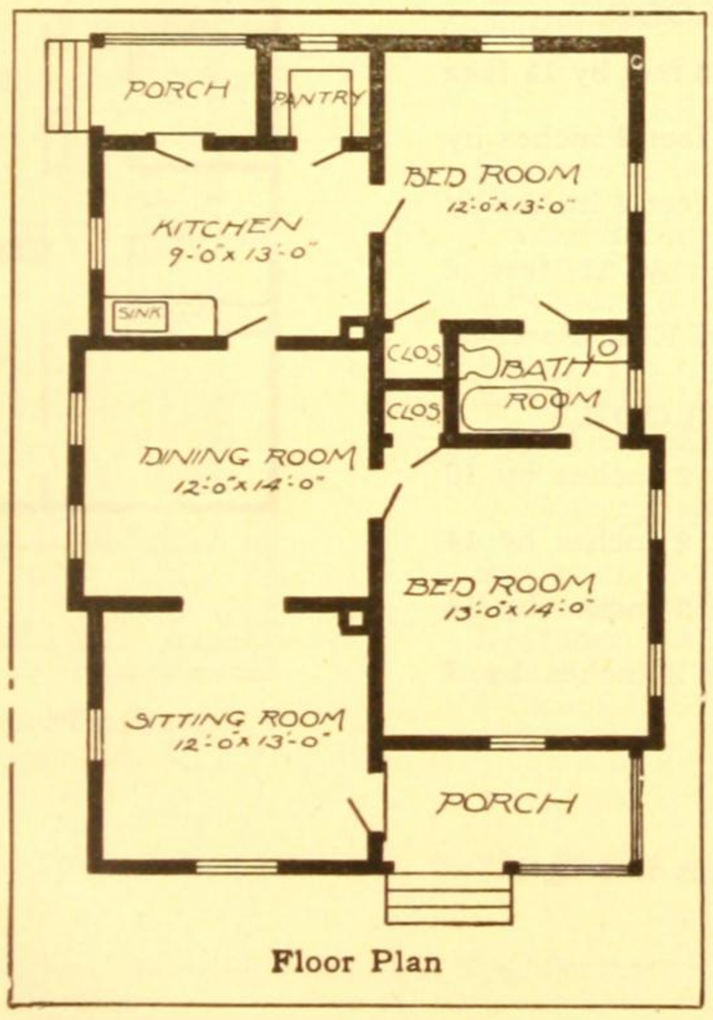


Second Floor Plan



DESIGN NUMBER 6077

Size: Width, 28 feet 6 inches; Length, 40 feet.



Floor Plan

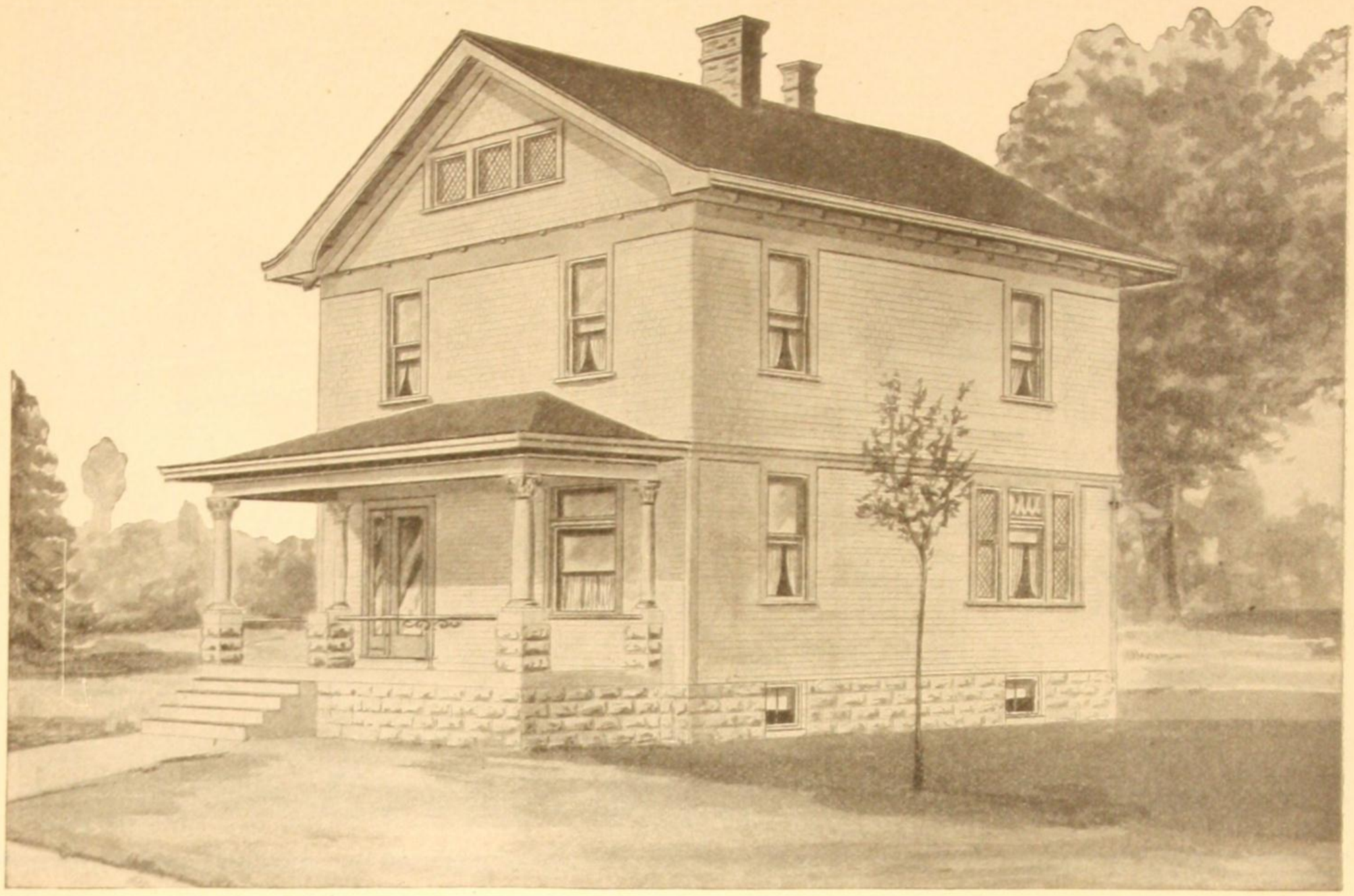
BLUE PRINTS consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.



Design No. 9066

The arrangement of this House is as follows:

FIRST FLOOR.

Reception Hall, 13 feet by 11 feea 2 inches.

Living Room, 13 feet 2 inches by 15 feet 2 inches.

Dining Room, 13 feet 2 inches by 15 feet 2 inches.

Kitchen, 13 feet by 11 feet 2 inches.

Pantry, Front and Rear Porches.

SECOND FLOOR.

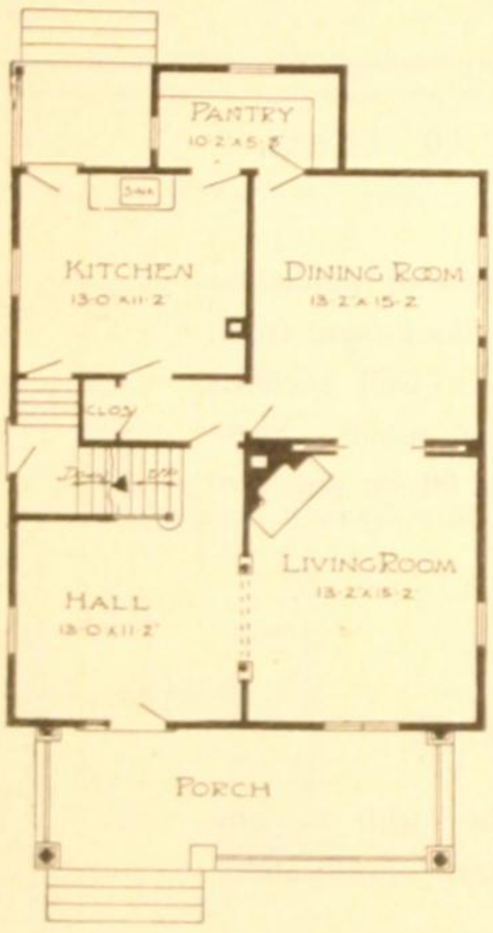
Bedroom, 13 feet 2 inches by 10 feet 2 inches.

Bedroom, 13 feet 2 inches by 14 feet 2 inches.

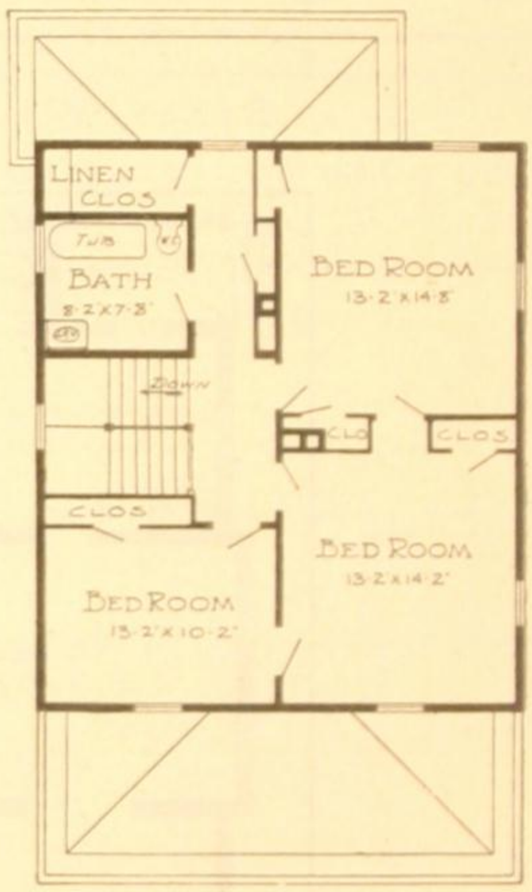
Bedroom, 13 feet 2 inches by 14 feet 8 inches.

Bathroom, 8 feet 2 inches by 7 feet 8 inches.

7 Closets.



First Floor Plan.



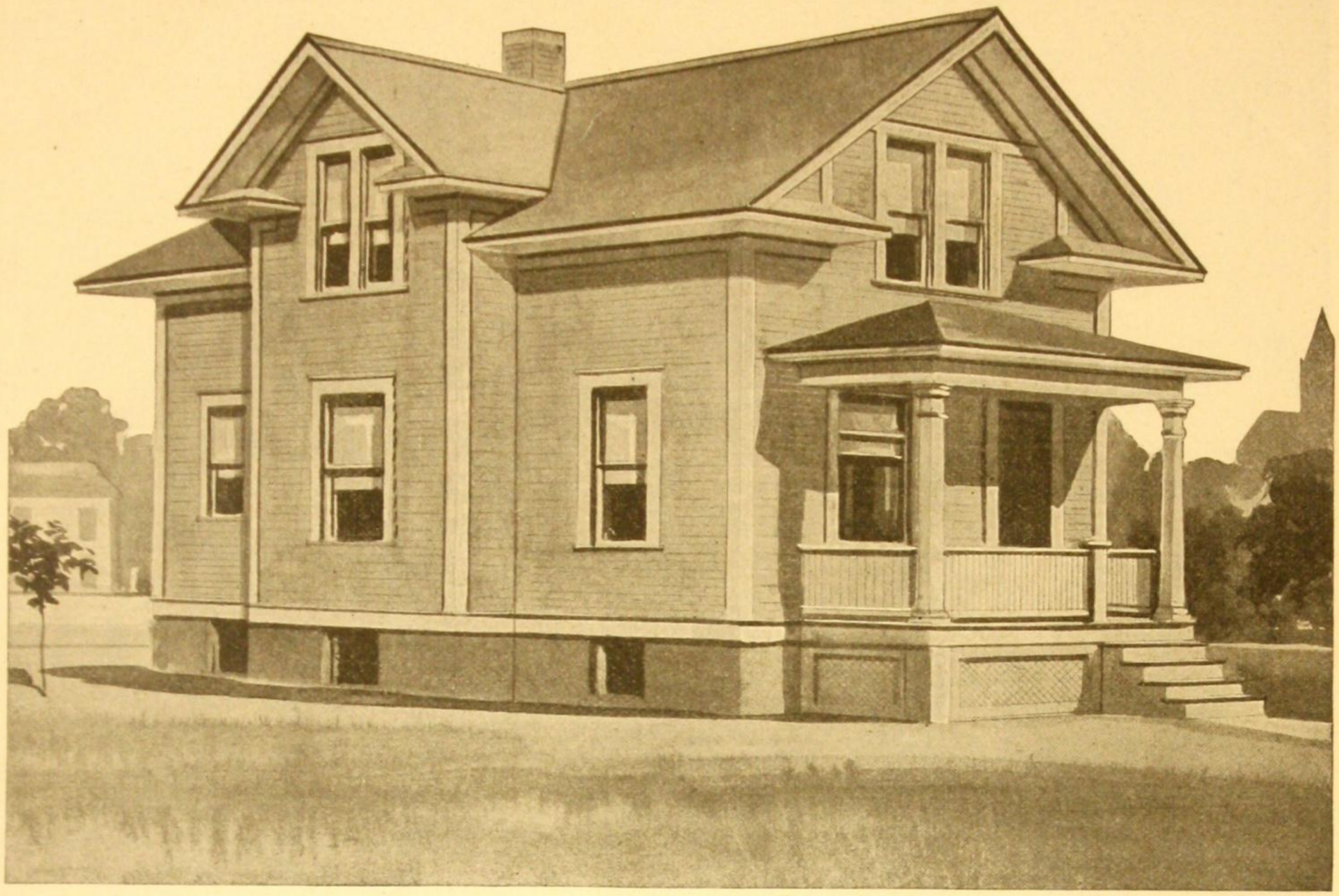
Second Floor Plan.

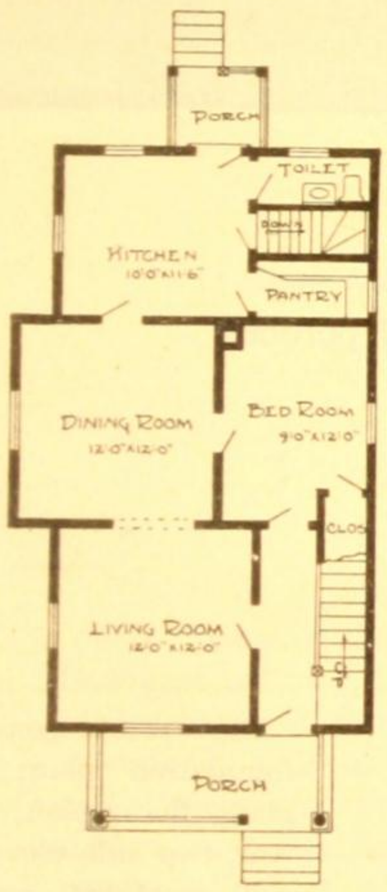
This Building is 37 feet 6 inches in width; 27 feet 6 inches in length.

Price of Complete Working Plans and Specifications..... $12.00

The Blue Printed Working Plans for this House consist of basement plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.





First Floor Plan.

Design No. 9014

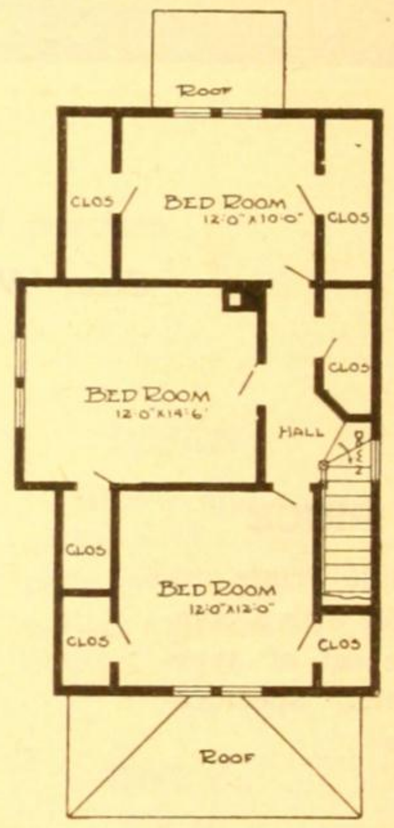
The arrangement of this House is as follows:

FIRST FLOOR.

Reception Hall, 6 feet 6 inches by 12 feet.
Living Room, 12 feet by 12 feet.
Dining Room, 12 feet by 12 feet.
Kitchen, 10 feet by 11 feet 6 inches.
Lavatory, 3 feet by 7 feet.
Bedroom, 9 feet by 12 feet.
Pantry, Front and Rear Porches.

SECOND FLOOR.

Bedroom, 12 feet by 12 feet.
Bedroom, 12 feet by 10 feet.
Bedroom, 12 feet by 14 feet 6 inches.
7 Closets.



Second Floor Plan.

This Building is 22 feet 6 inches in width; 36 feet in length.

Price of Complete Working Plans and Specifications..... **$12.00**

The Blue Printed Working Plans for this House consist of basement plan; roof plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.

Design No. 7081

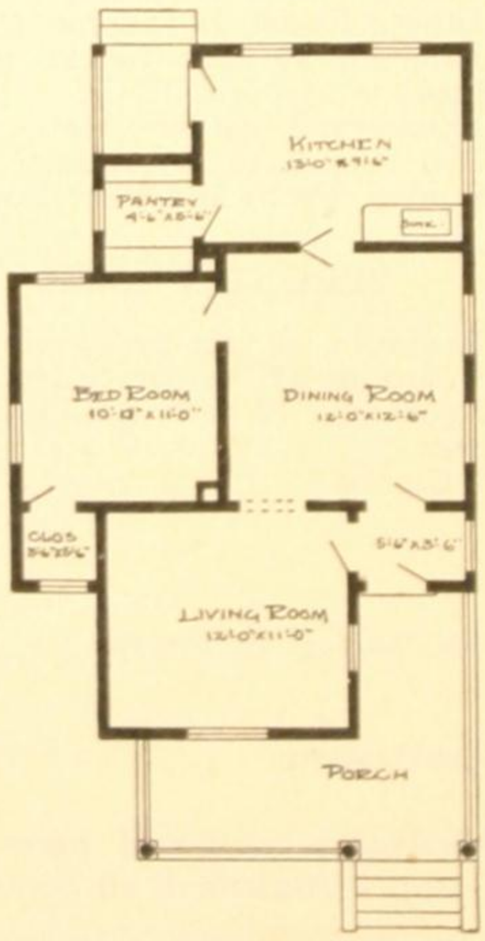
Size: Width, 23 feet 6 inches; Length, 35 feet, exclusive of porches

PRICE

of Blue Prints, together with a complete set of typewritten specifications

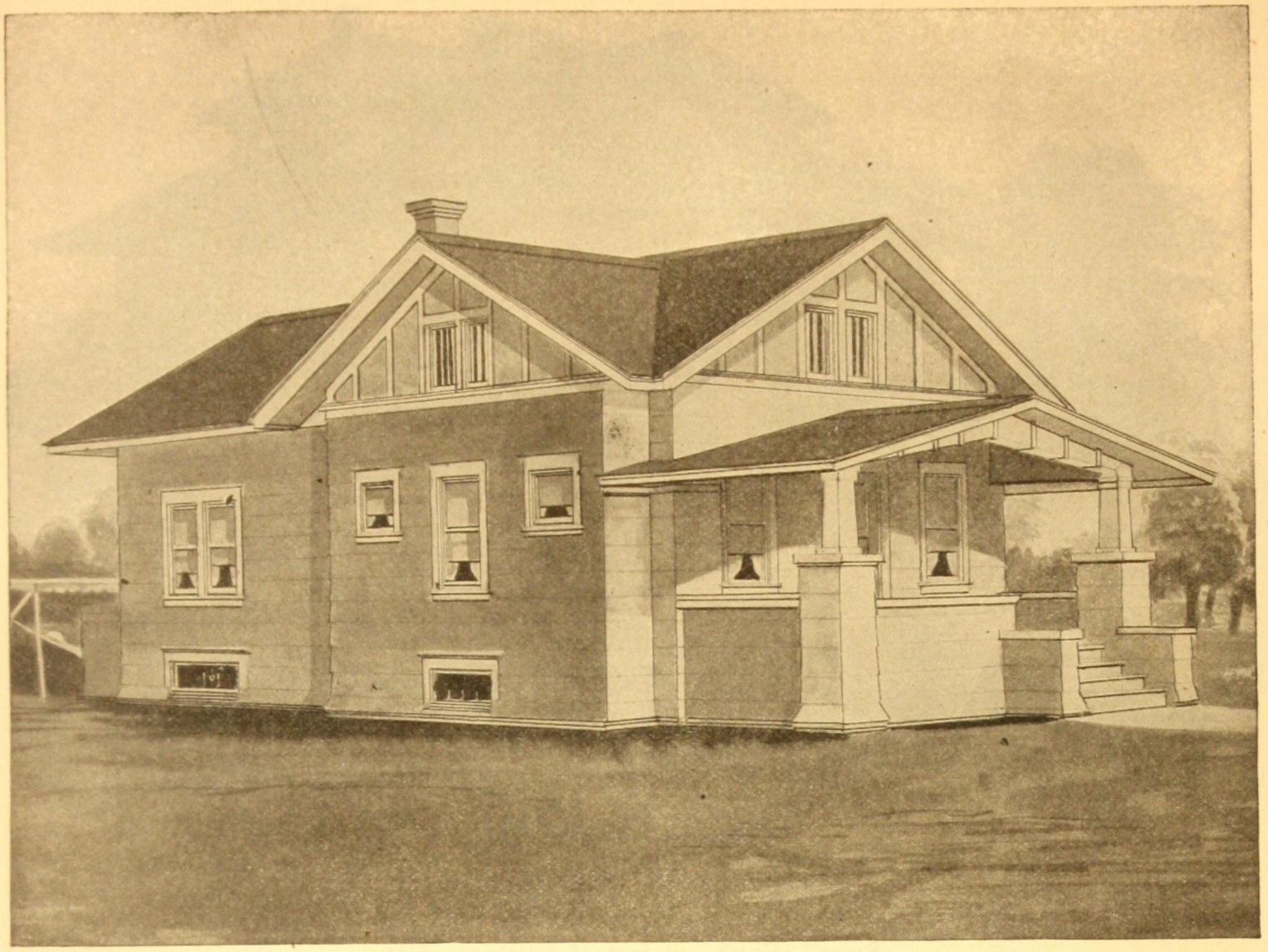
ONLY TEN DOLLARS

We mail Plans and Specifications the same day order is received.



Floor Plan

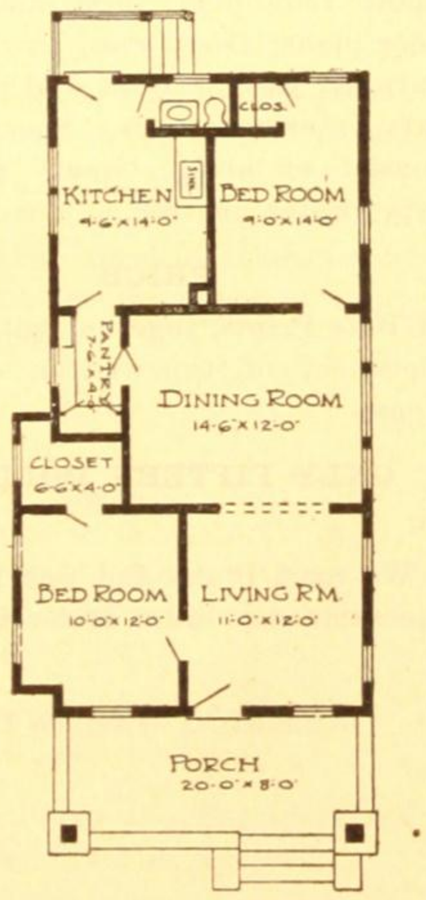
Blue prints consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.



Design No. 7015

Size: Width, 22 feet 6 inches; Length, 40 feet, exclusive of porches

Blue Prints consist of basement plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifiations consist of about fifteen pages of typewritten matter.



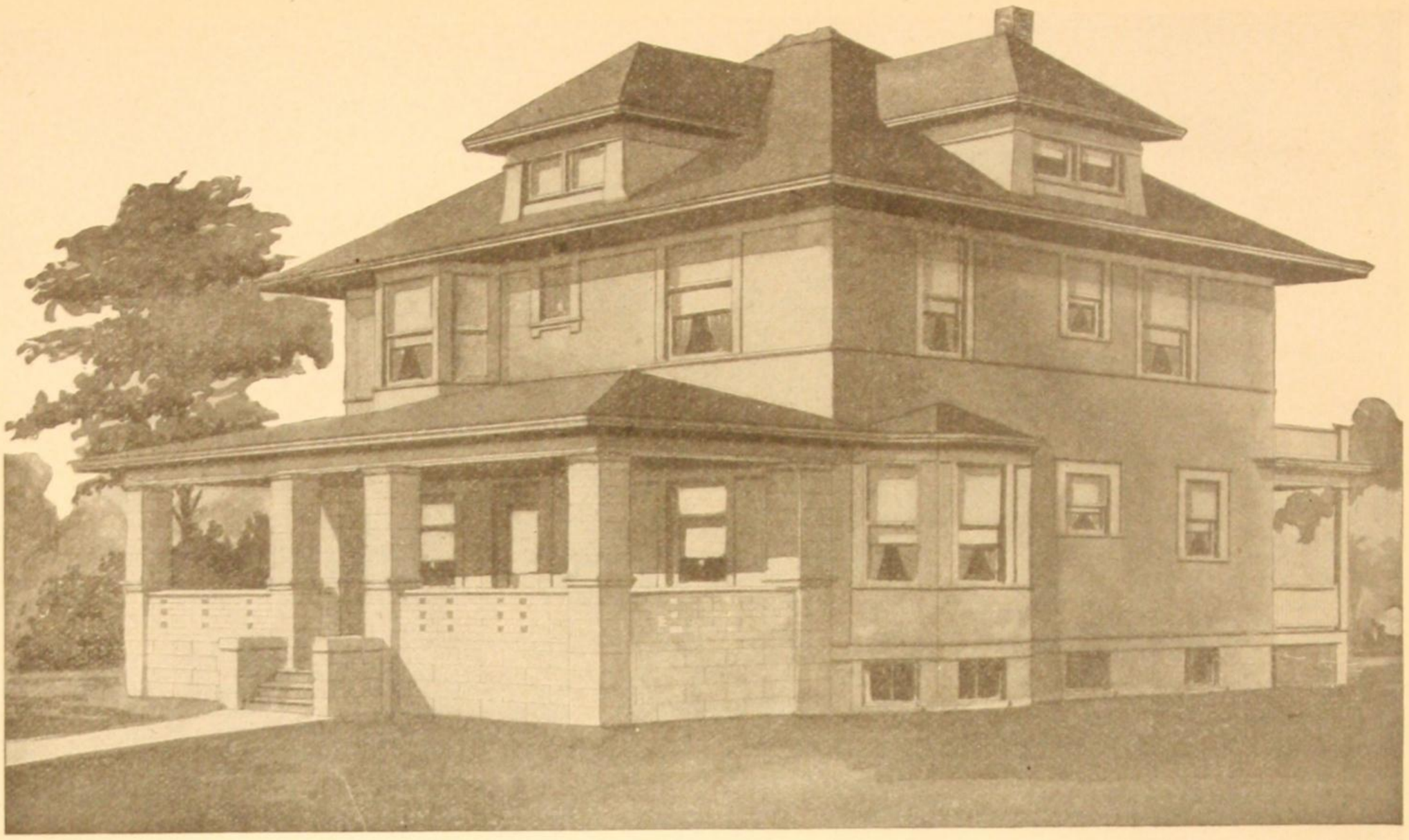
Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

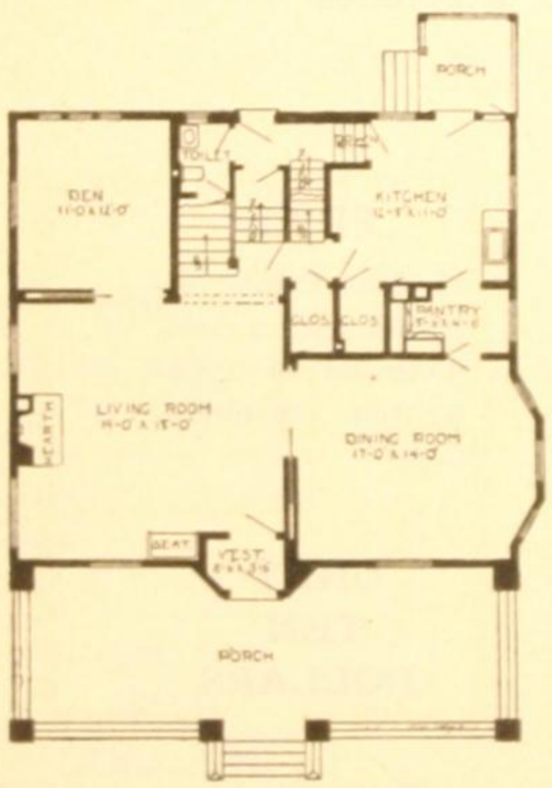
ONLY TEN DOLLARS

We mail Plans and Specifications the same day order is received.



Design No. 8046

Size: Width, 38 feet; Length, 32 feet



First Floor Plan

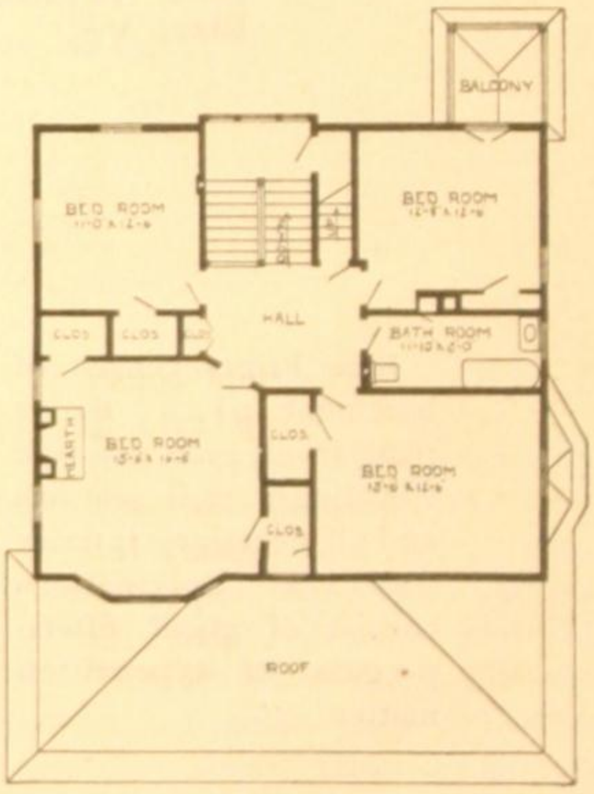
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

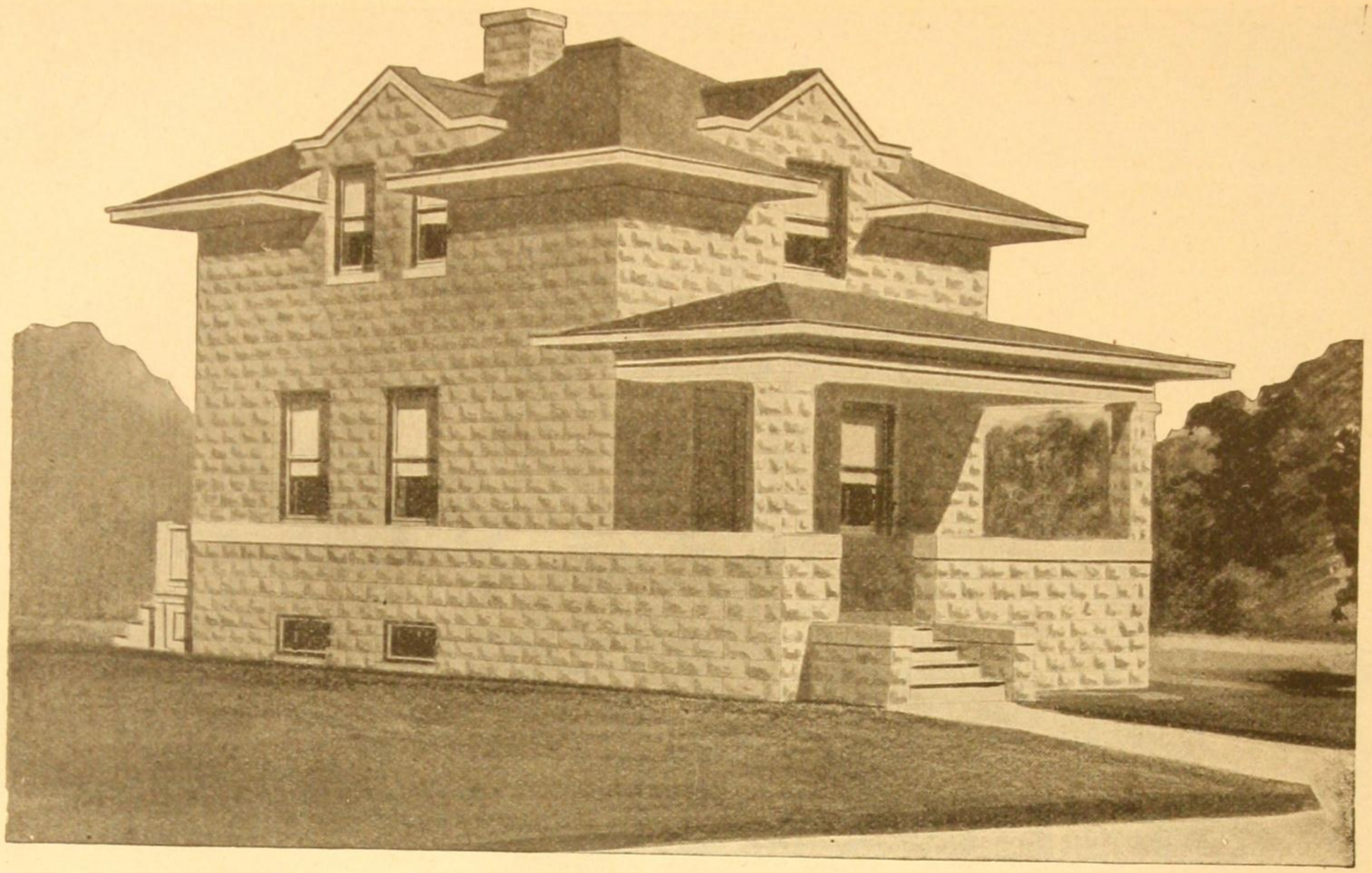
of Blue Prints, together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

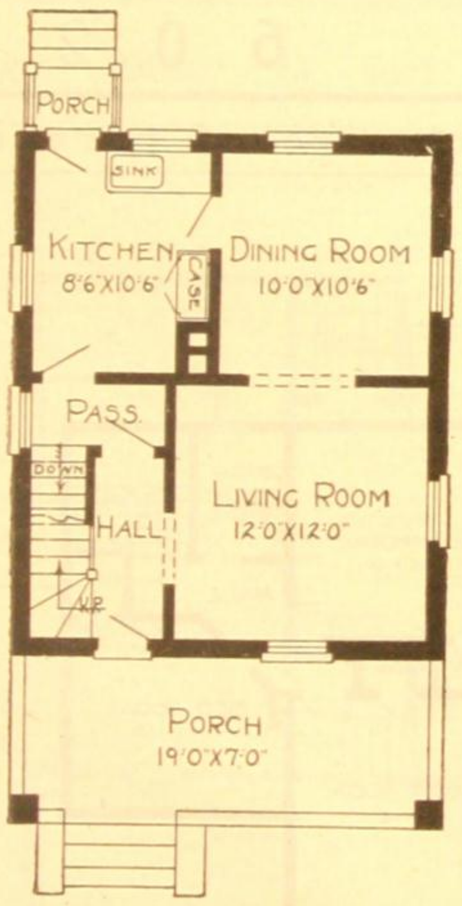


Second Floor Plan



Design No. 8197

Size: Width, 20 feet 8 inches; Length, 24 feet 8 inches



First Floor Plan

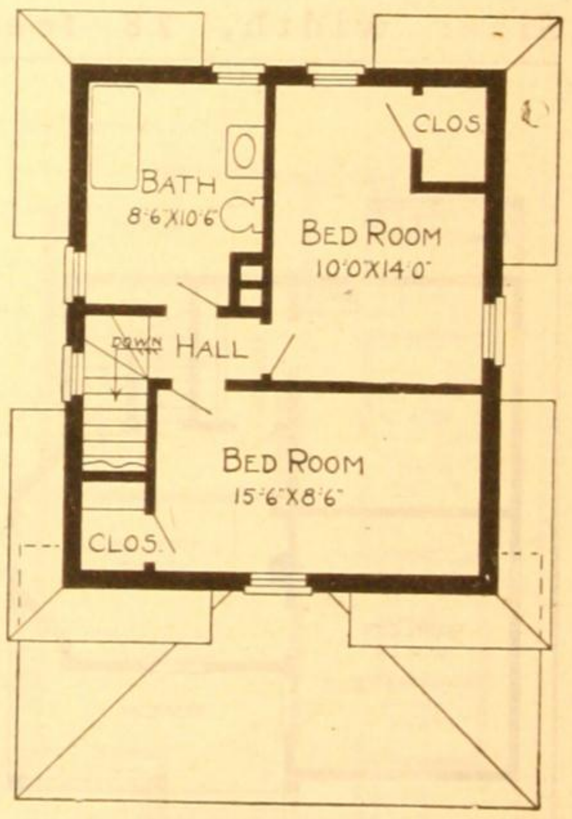
Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.



Second Floor Plan

DESIGN NUMBER 6021

Size: width, 28 feet, 6 inches; length, 28 feet, exclusive of porches

First Floor Plan

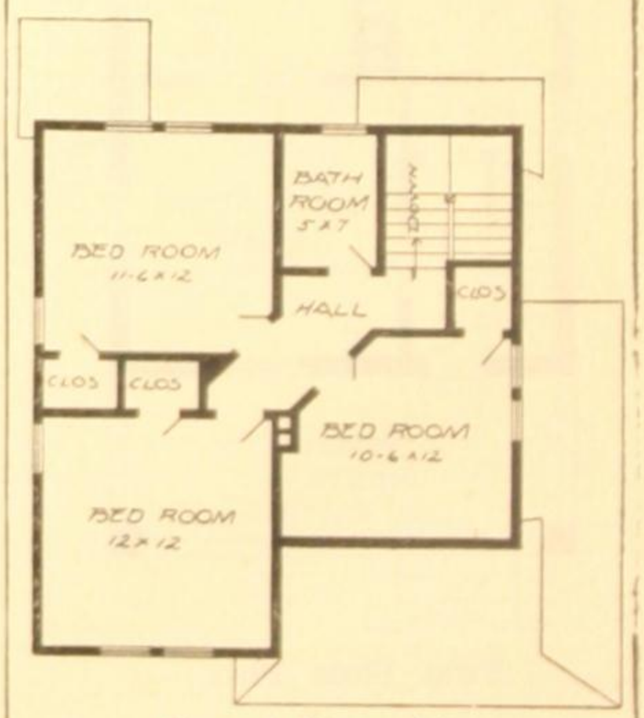
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

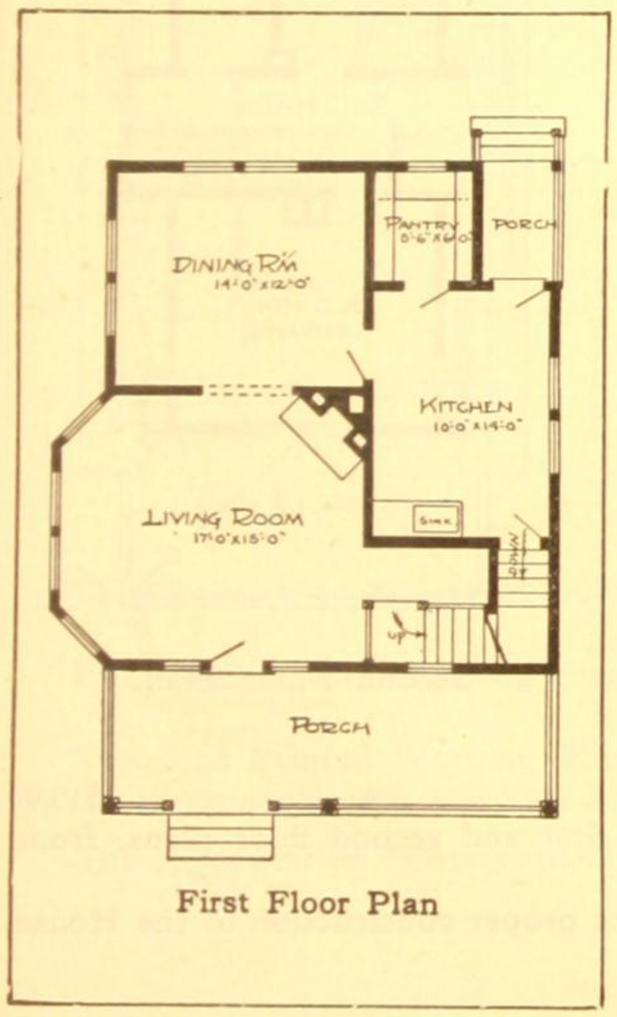
We mail plans and specifications the same day order is received.



Second Floor Plan

DESIGN NUMBER 6008

Size: width, 28 feet 6 inches; length, 28 feet 6 inches, exclusive of porches



First Floor Plan

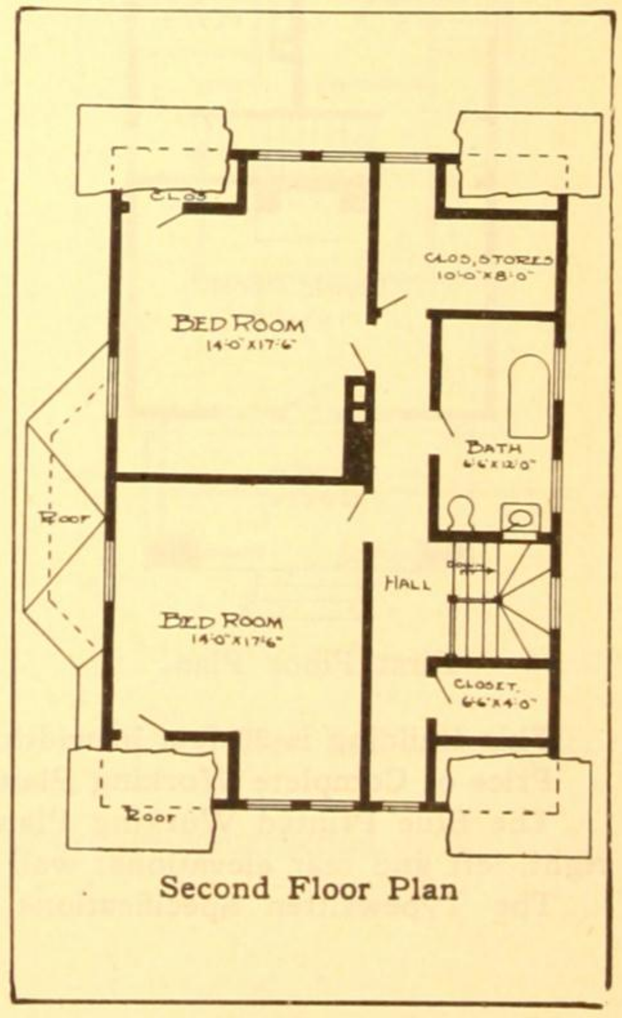
BLUE PRINTS consist of basement plan; first and second floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

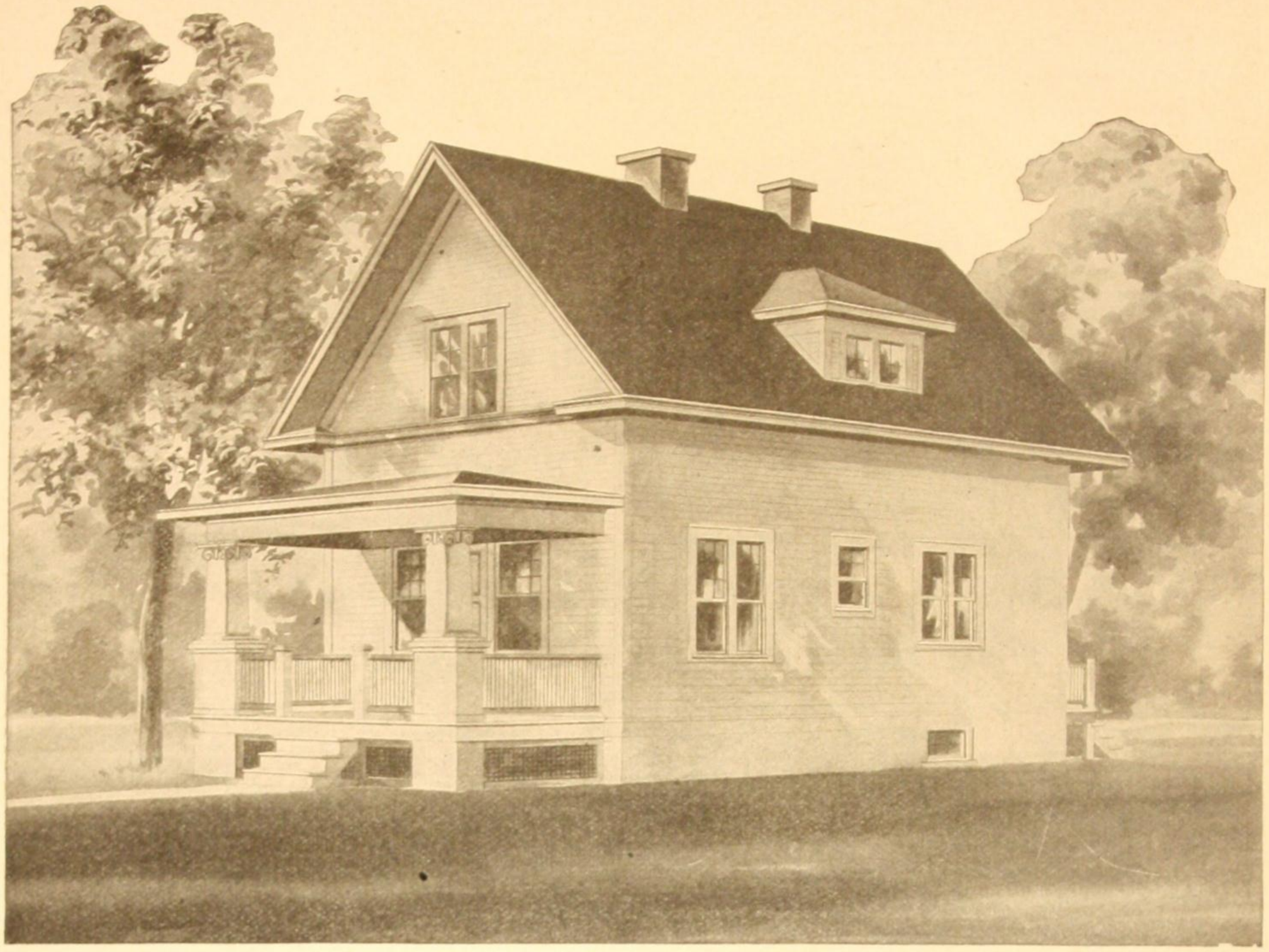
of Blue Prints, together with a complete set of typewritten specifications

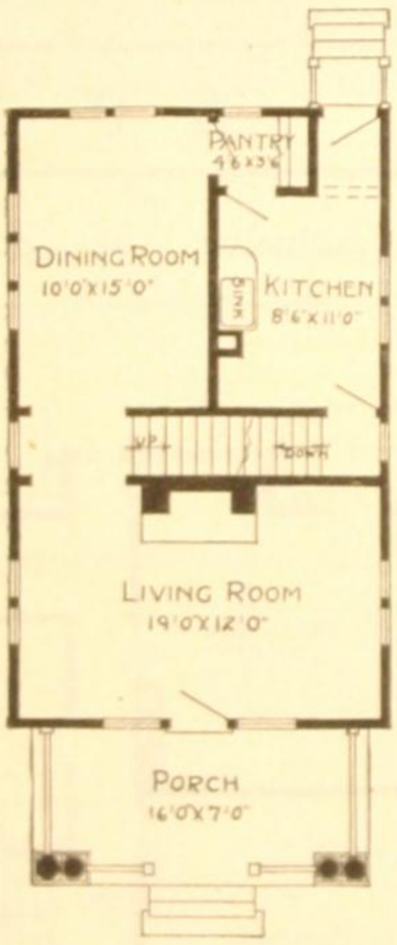
ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.



Second Floor Plan





First Floor Plan.

Design No. 9050

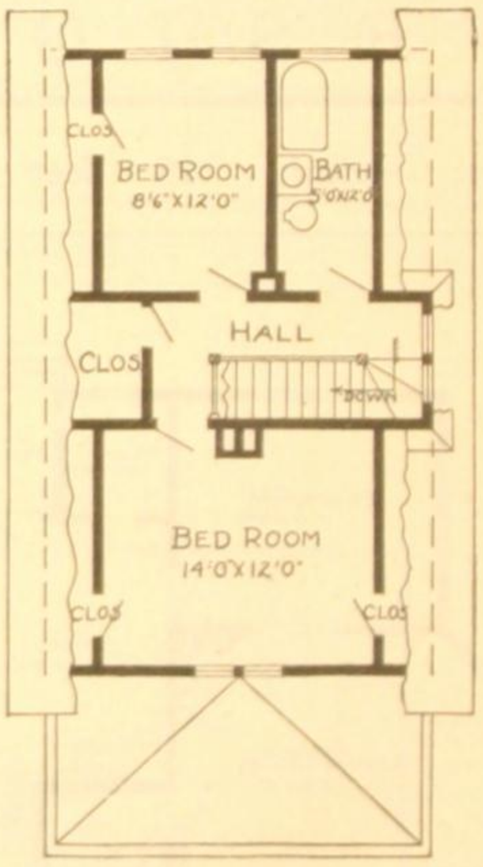
The arrangement of this House is as follows:

FIRST FLOOR.

Living Room, 19 feet by 12 feet.
Dining Room, 10 feet by 15 feet.
Kitchen, 8 feet 6 inches by 11 feet.
Pantry and Front Porch.

SECOND FLOOR.

Bedroom, 14 feet by 12 feet.
Bedroom, 8 feet 6 inches by 12 feet.
Bathroom, 5 feet by 12 feet.
4 Closets.



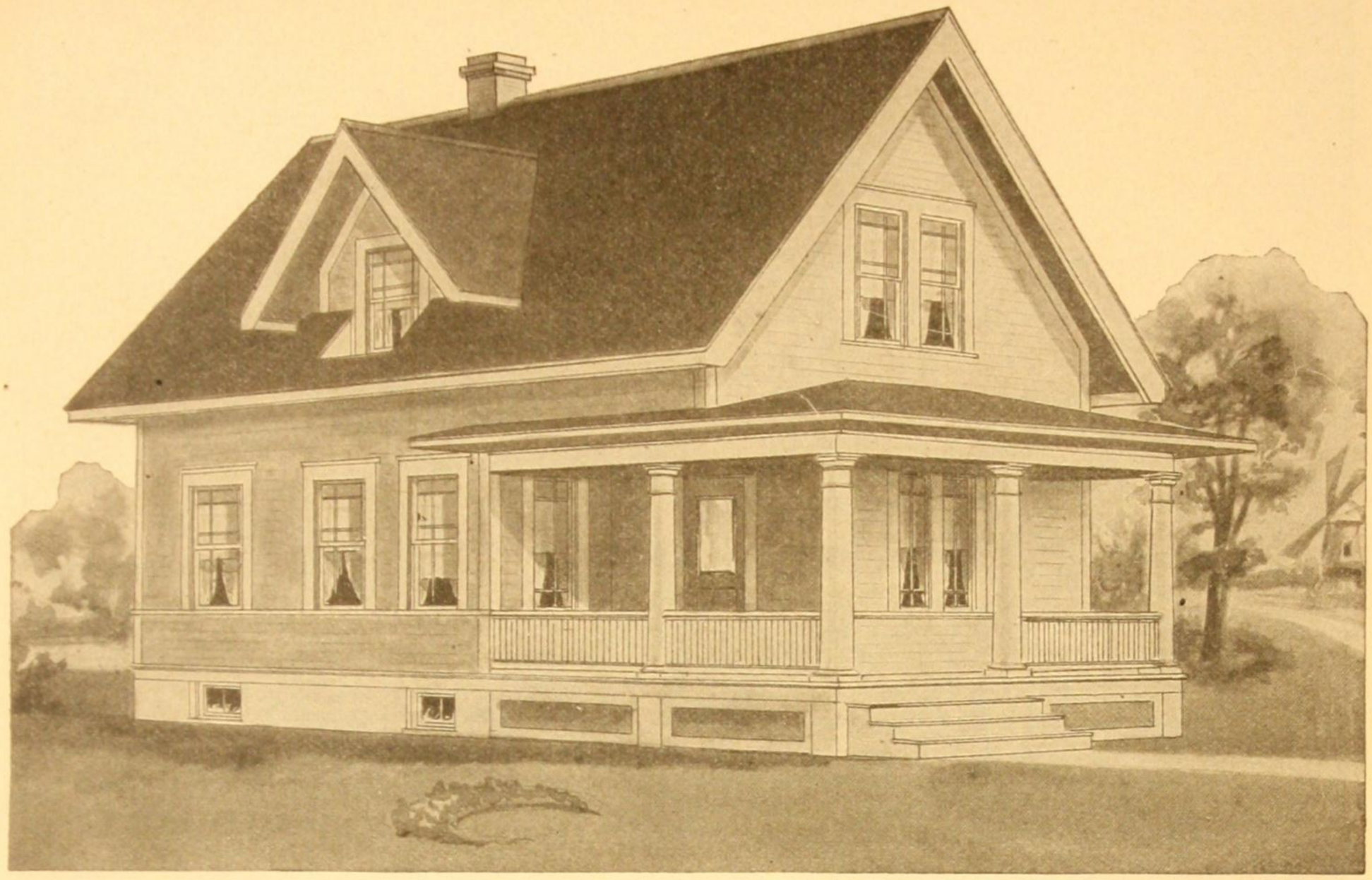
Second Floor Plan.

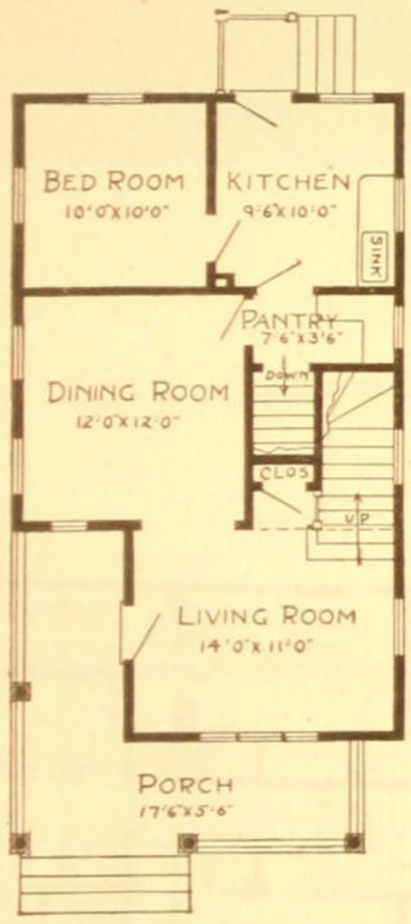
This Building is 20 feet in width; 32 feet in length.

Price of Complete Working Plans and Specifications..... $10.00

The Blue Printed Working Plans for this House consist of basement plan; first and second floor plans, front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.





First Floor Plan.

Design No. 9048

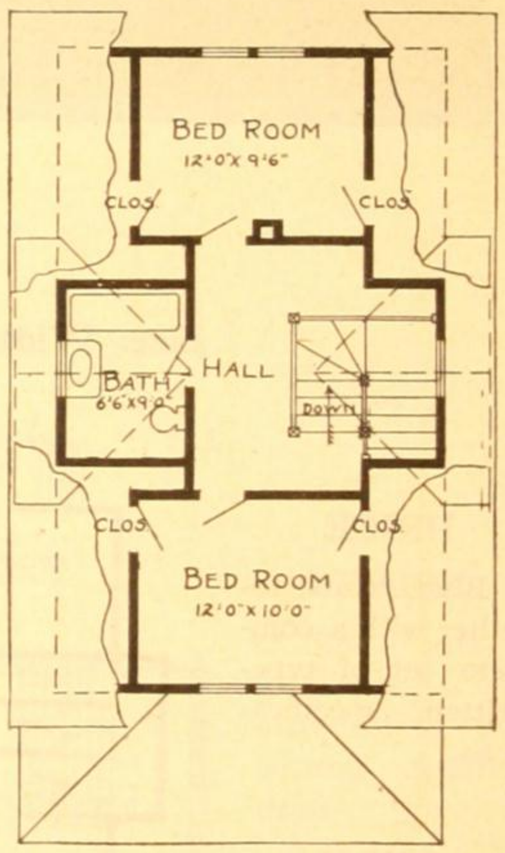
The arrangement of this House is as follows:

FIRST FLOOR.

Living Room, 14 feet by 11 feet.
Dining Room, 12 feet by 12 feet.
Kitchen, 9 feet 6 inches by 10 feet.
Bedroom, 10 feet by 10 feet.
Pantry, Front and Rear Porches.

SECOND FLOOR.

Bedroom, 12 feet by 10 feet.
Bedroom, 12 feet by 9 feet 6 inches.
Bathroom, 6 feet 6 inches by 9 feet.
4 Closets.



Second Floor Plan.

This Building is 21 feet in width; 34 feet 6 inches in length.

Price of Complete Working Plans and Specifications..... $12.00

The Blue Printed Working Plans for this House consist of basement plan, roof plan, first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.

Design No. 7054

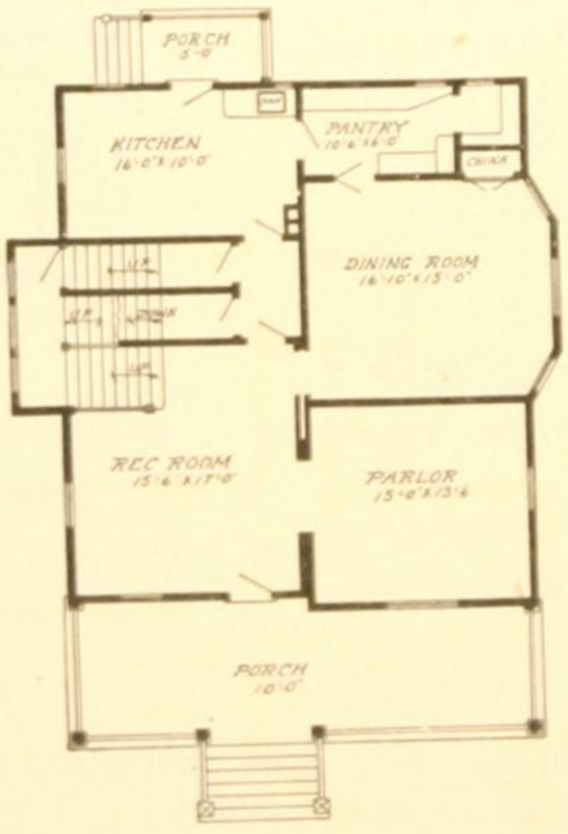
Size: Width, 38 feet; Length, 36 feet 6 inches, exclusive of porches

PRICE

of Blue Prints, together with a complete set of typewritten specifications.

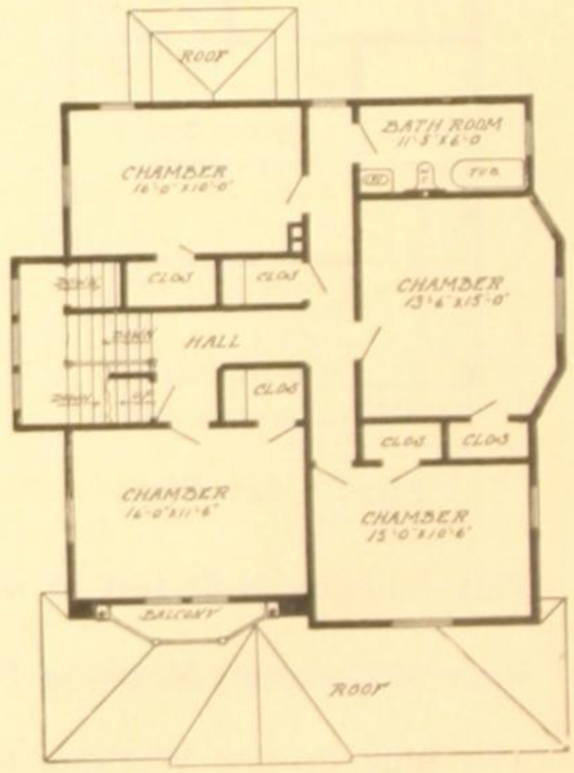
ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.



First Floor Plan

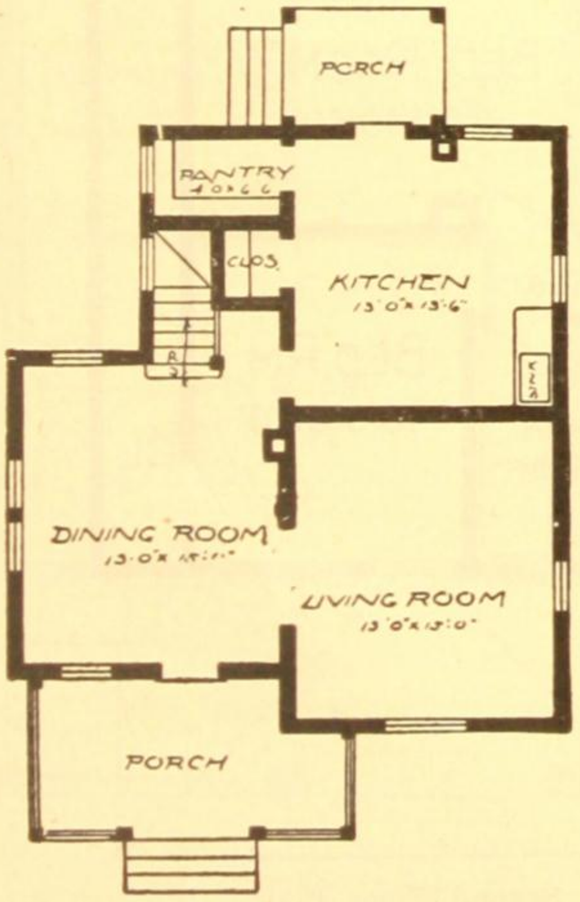
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



Second Floor Plan

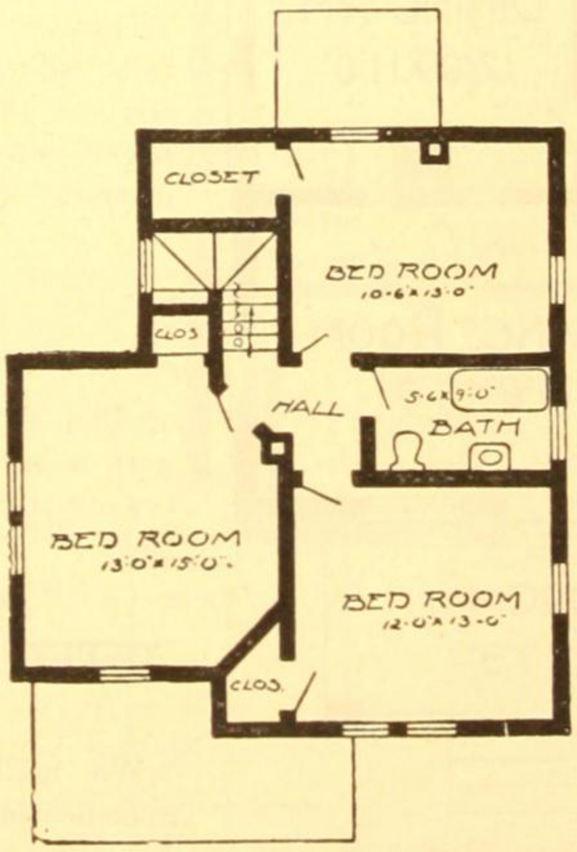
Design No. 7010

Size: Width, 27 feet 6 inches; Length, 30 feet, exclusive of porches



First Floor Plan

Blue prints consist of cellar and foundation plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



Second Floor Plan

PRICE

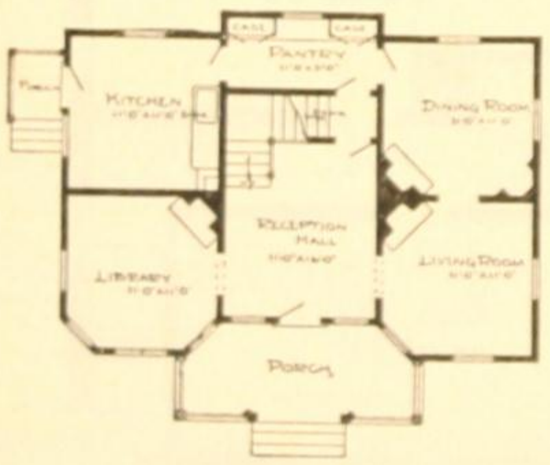
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

DESIGN NUMBER 6053

Size: width, 35 feet; length, 23 feet, 6 inches exclusive of porches



First Floor Plan

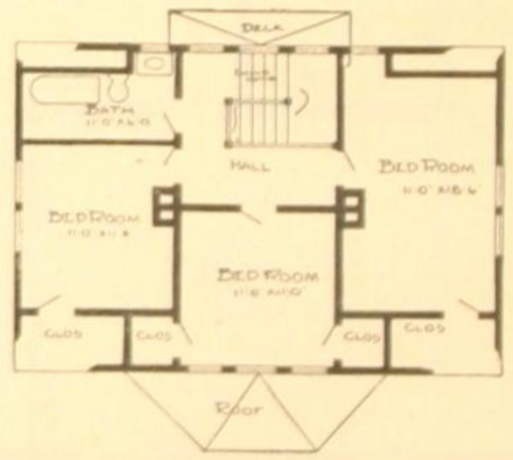
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications.

ONLY TWELVE DOLLARS

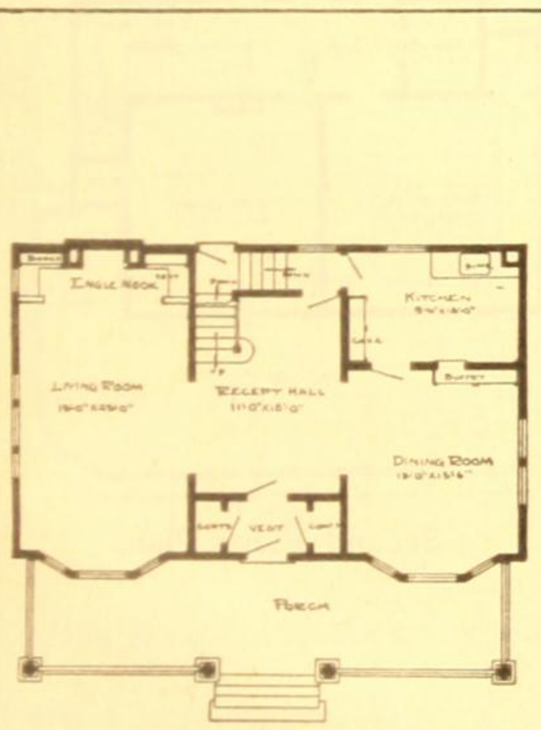
We mail plans and specifications the same day order is received.



Second Floor Plan

DESIGN NUMBER 6059

Size: width, 39 feet; length, 25 feet 6 inches, exclusive of porch



First Floor Plan

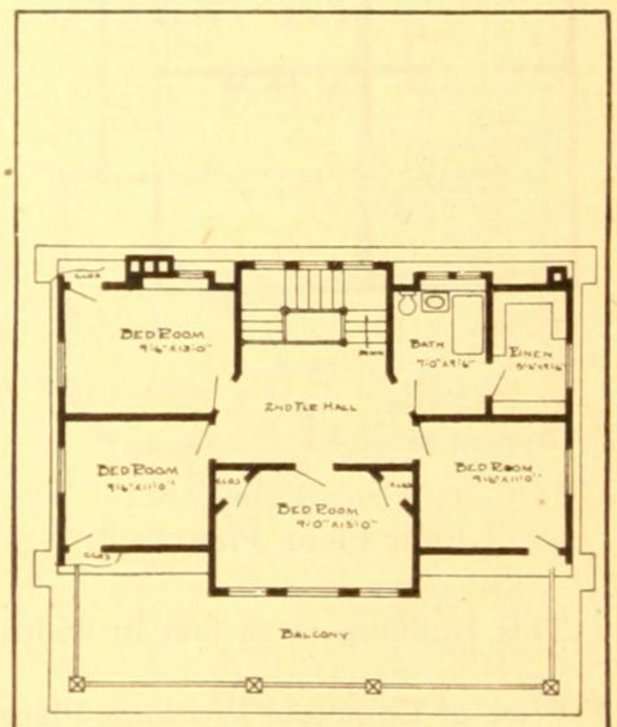
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

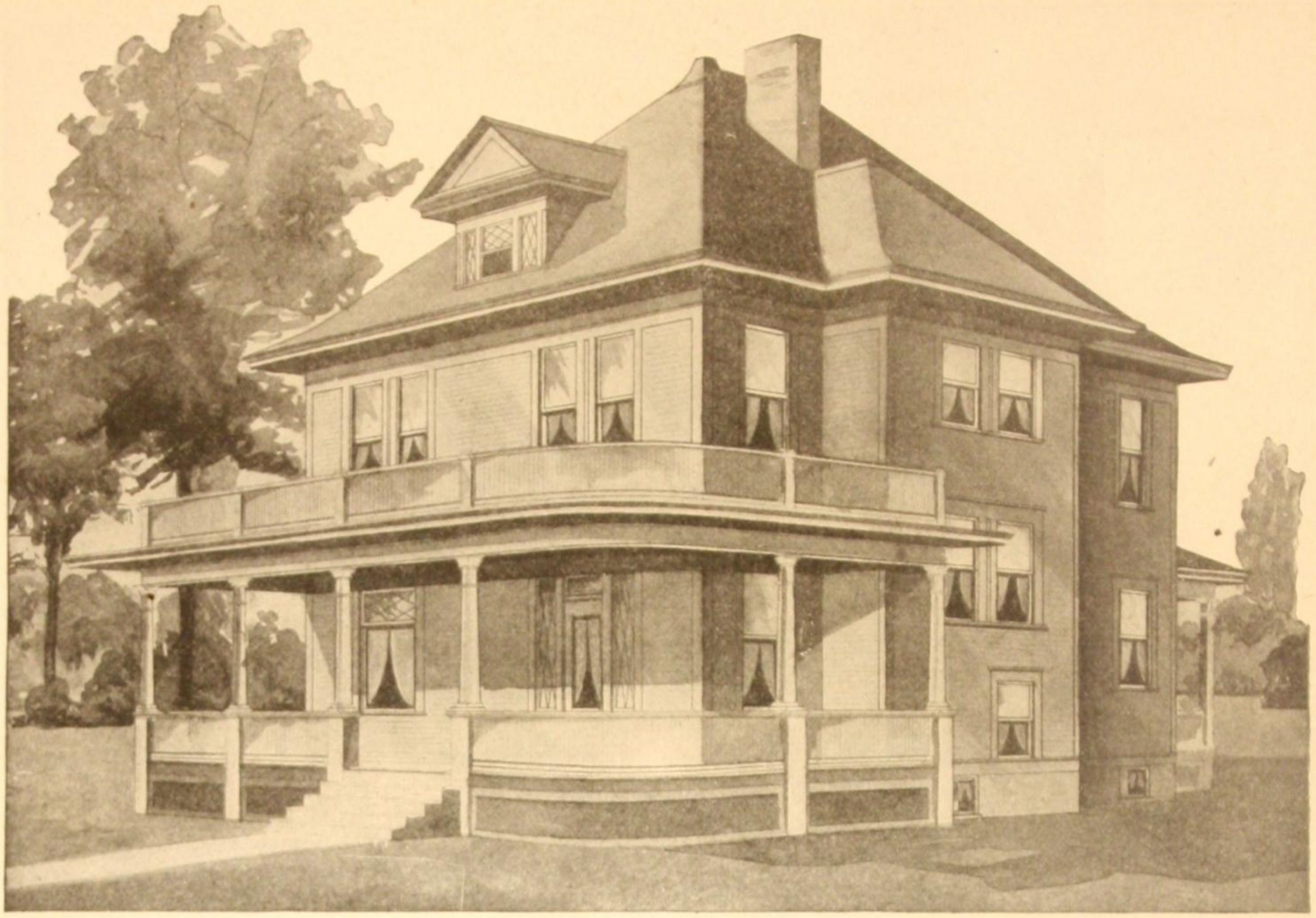
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

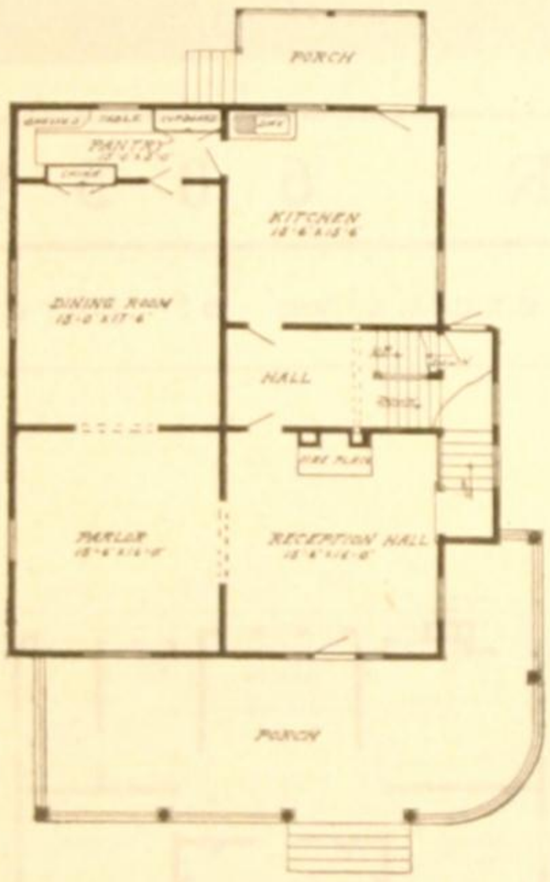
We mail plans and specifications the same day order is received.



Second Floor Plan



Design No. 9010



First Floor Plan.

The arrangement of this House is as follows:

FIRST FLOOR.

Reception Hall, 15 feet 6 inches by 16 feet.

Parlor, 15 feet 6 inches by 16 feet.

Dining Room, 15 feet by 17 feet 6 inches.

Kitchen, 15 feet 6 inches by 15 feet 6 inches.

Pantry, Front and Rear Porches.

SECOND FLOOR.

Bedroom, 14 feet 6 inches by 16 feet.

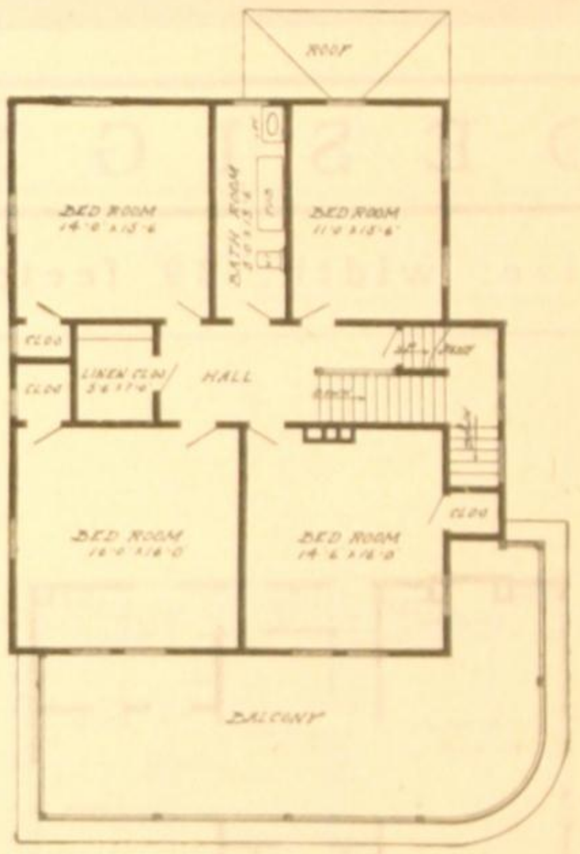
Bedroom, 16 feet by 16 feet.

Bedroom, 11 feet by 15 feet 6 inches.

Bedroom, 14 feet by 15 feet 6 inches.

Bathroom, 5 feet by 15 feet 6 inches.

4 Closets.



Second Floor Plan.

This Building is 36 feet in width; 40 feet 6 inches in length.

Price of Complete Working Plans and Specifications $15.00

The Blue Printed Working Plans for this House consist of basement plan; roof plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.

Design No. 9007

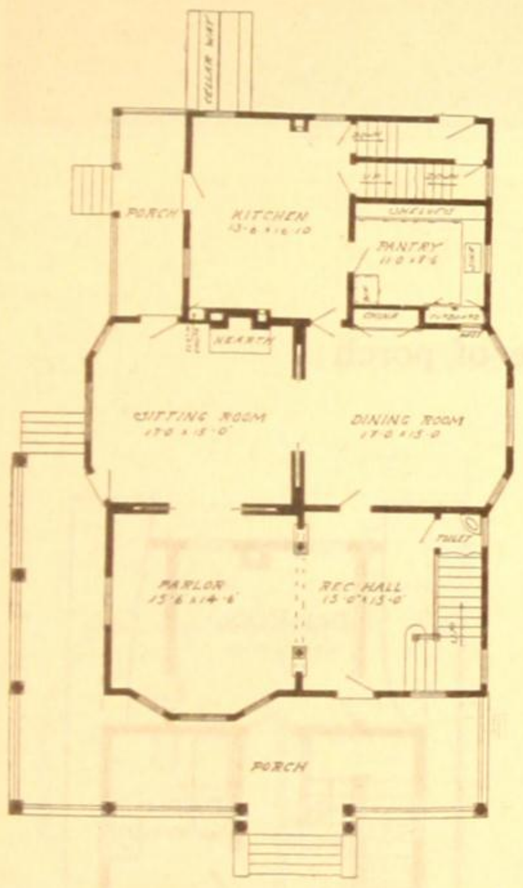
The arrangement of this House is as follows:

FIRST FLOOR.

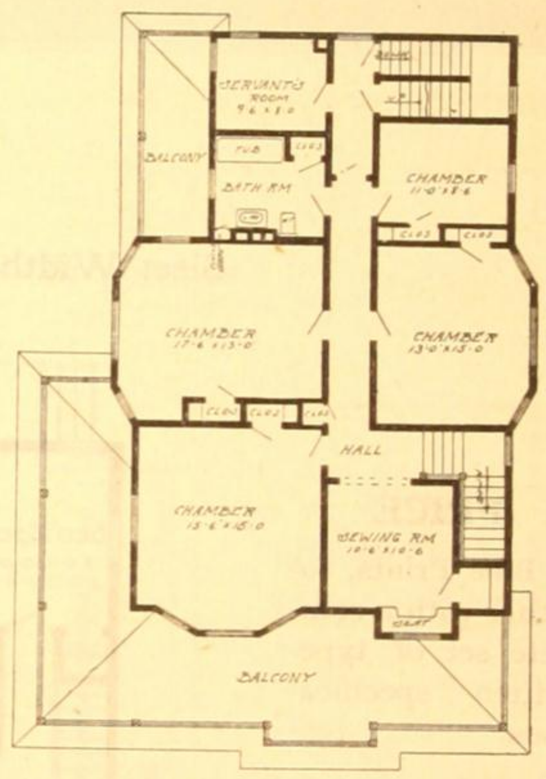
Reception Hall, 15 feet by 15 feet.
Parlor, 15 feet 6 inches by 14 feet 6 inches.
Living Room, 17 feet by 15 feet.
Dining Room, 17 feet by 15 feet.
Kitchen, 13 feet 6 inches by 16 feet 10 inches.
Pantry, Front and Rear Porches.

SECOND FLOOR.

Bedroom, 15 feet 6 inches by 15 feet.
Bedroom, 17 feet 6 inches by 13 feet.
Bedroom, 13 feet by 15 feet.
Sewing Room, 10 feet 6 inches by 10 feet 6 inches.
Servant's Room, 9 feet 6 inches by 8 feet.
Bathroom, 9 feet 6 inches by 7 feet 6 inches.
6 Closets.



First Floor Plan.



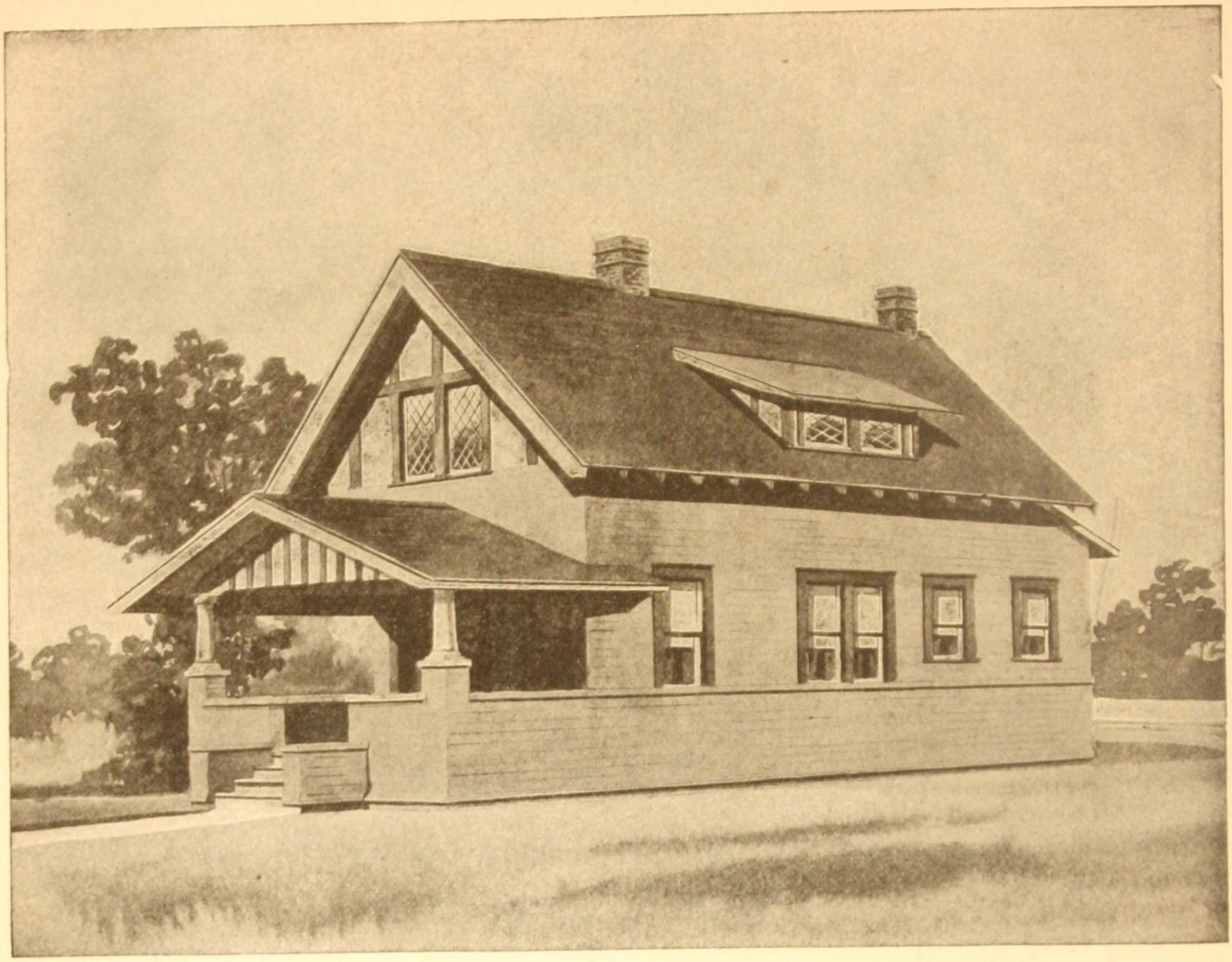
Second Floor Plan.

This Building is 36 feet in width; 51 feet in length.

Price of Complete Working Plans and Specifications $15.00

The Blue Printed Working Plans for this House consist of basement plan; roof plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.



Design No. 7012

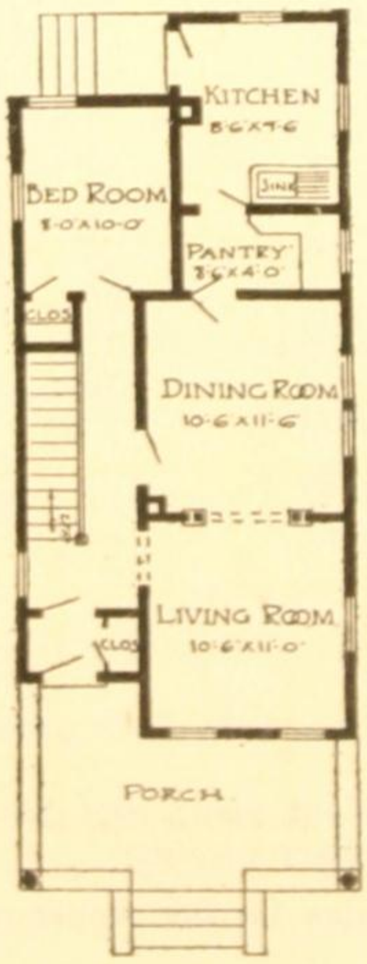
Size: Width, 18 feet; Length, 38 feet 6 inches, exclusive of porch

PRICE

of Blue Prints, together with a complete set of typewritten specifications

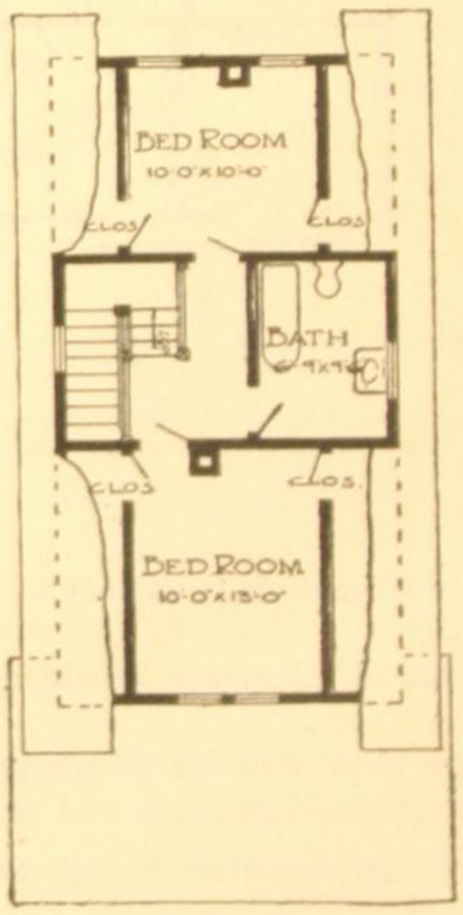
ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

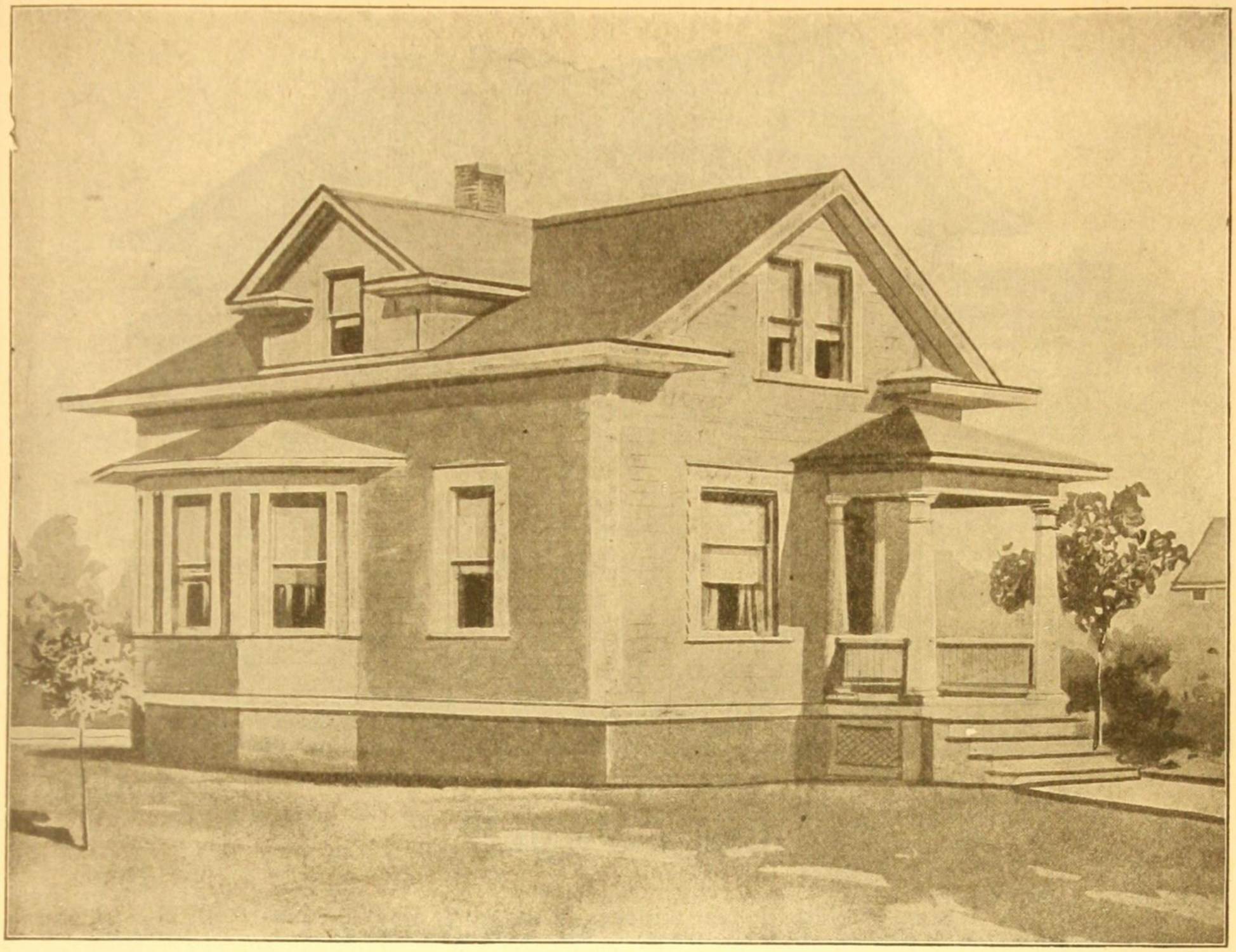


First Floor Plan

Blue prints consist of foundation plan; first and second floor plans; front, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

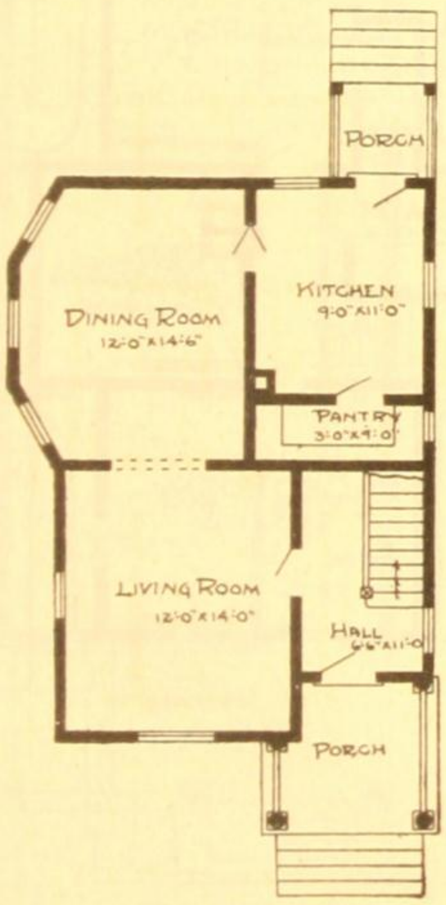


Second Floor Plan



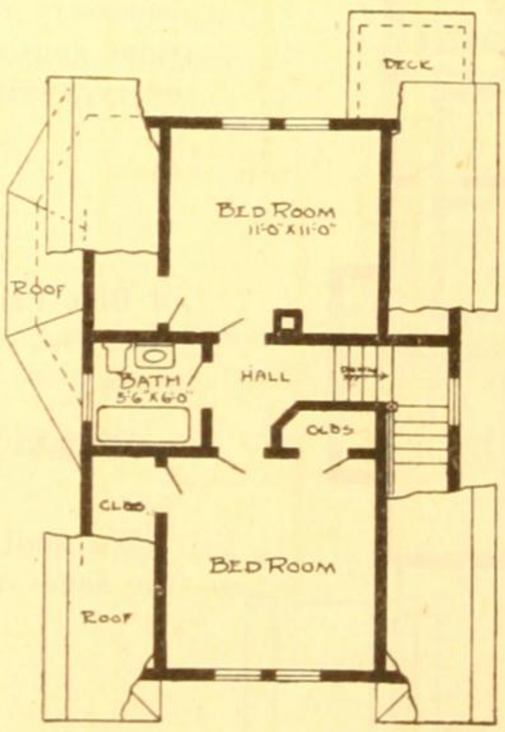
Design No. 7013

Size: Width, 22 feet 6 inches; Length, 30 feet, exclusive of porches



First Floor Plan

Blue prints consist of foundation plan; roof plan; first and second floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



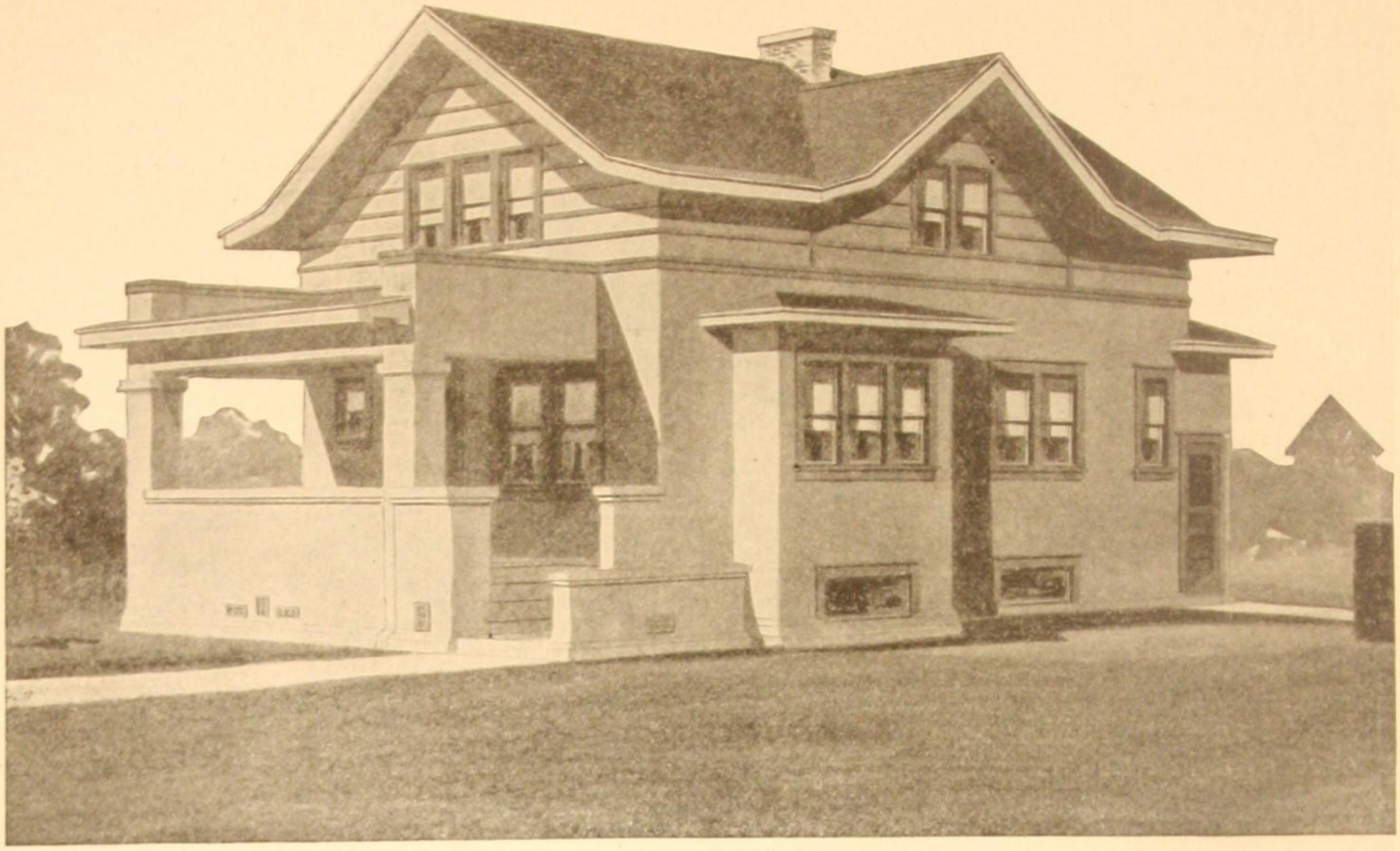
Second Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

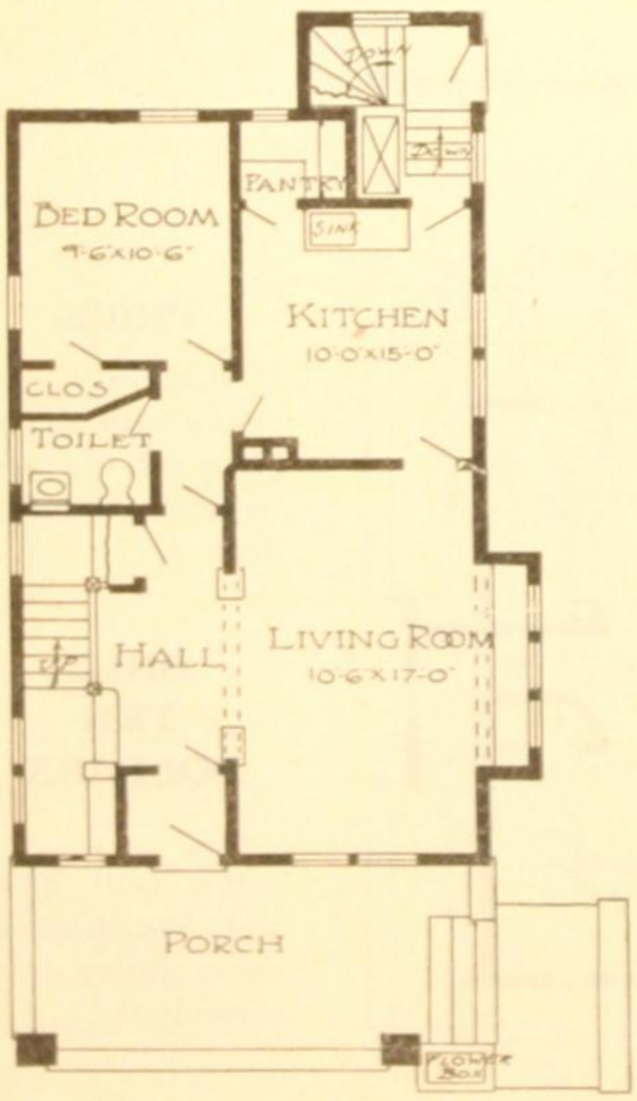
ONLY TEN DOLLARS

We mail Plans and Specifications the same day order is received.



Design No. 8199

Size: Width, 23 feet 6 inches; Length, 37 feet 6 inches



First Floor Plan

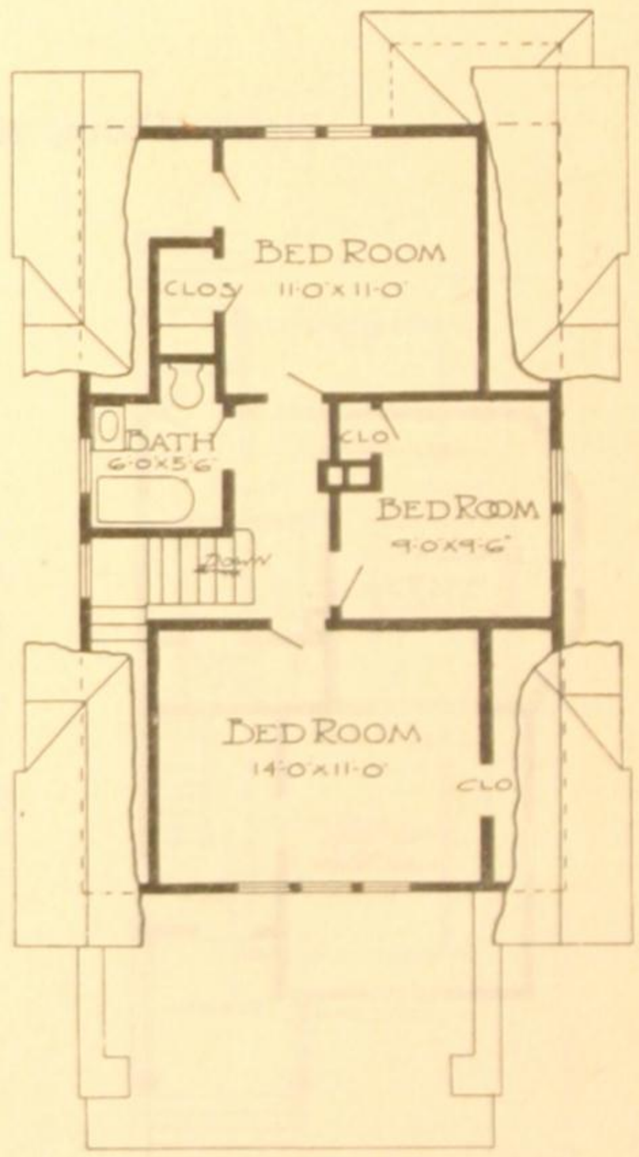
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

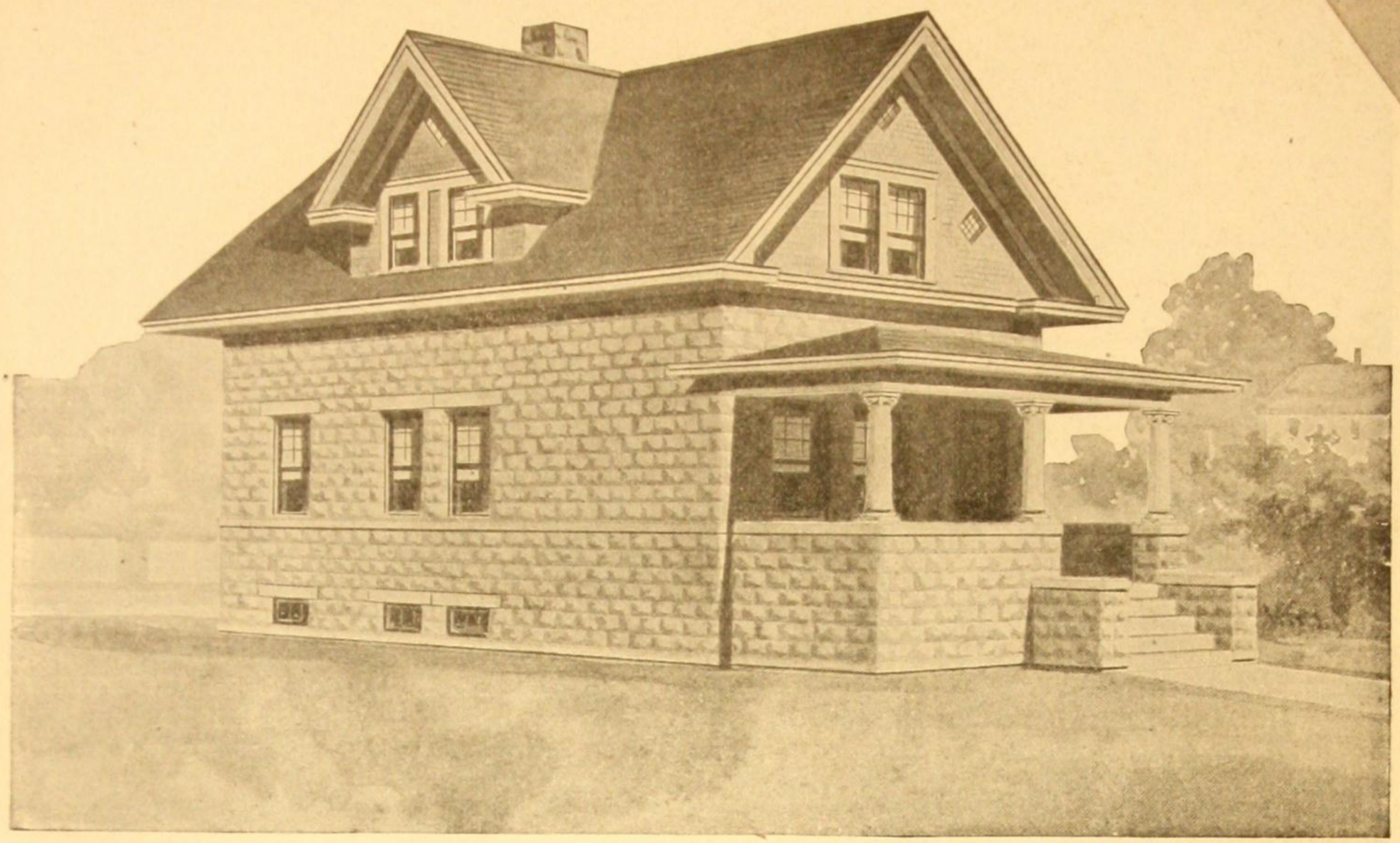
of Blue Prints, together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

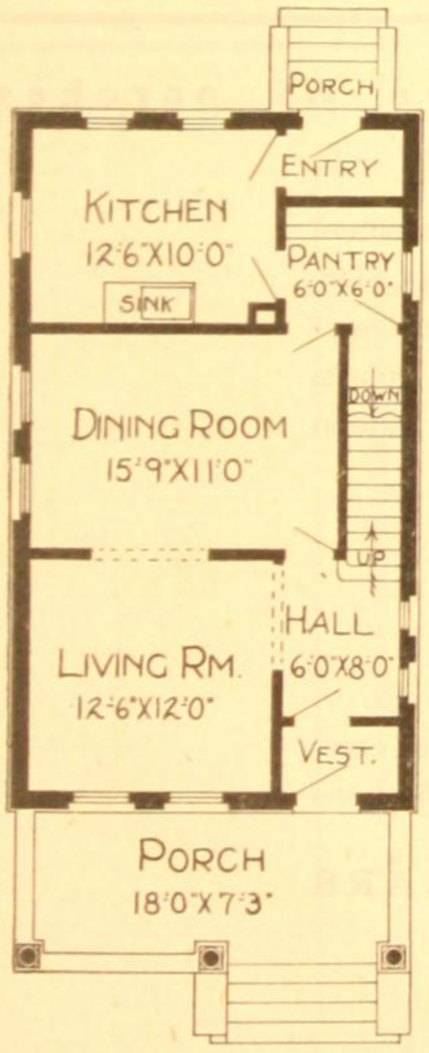


Second Floor Plan



Design No. 8235

Size: Width, 20 feet 8 inches; Length, 36 feet



First Floor Plan

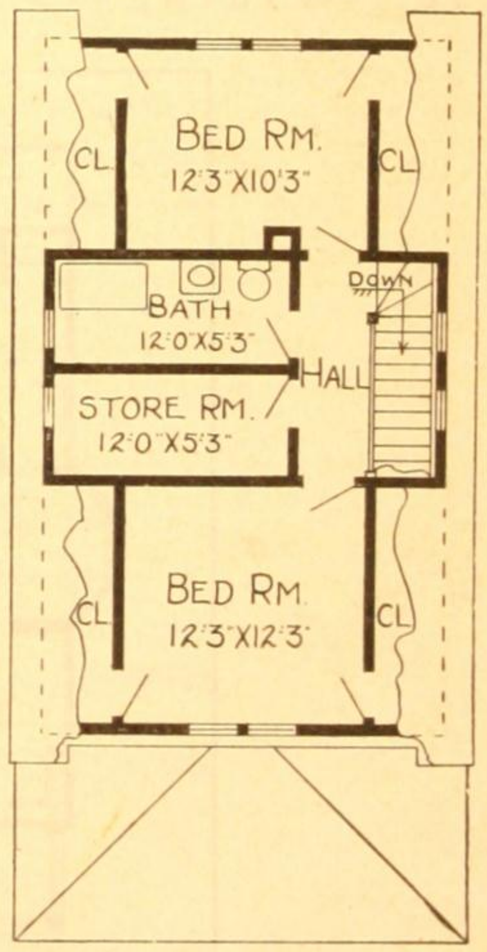
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

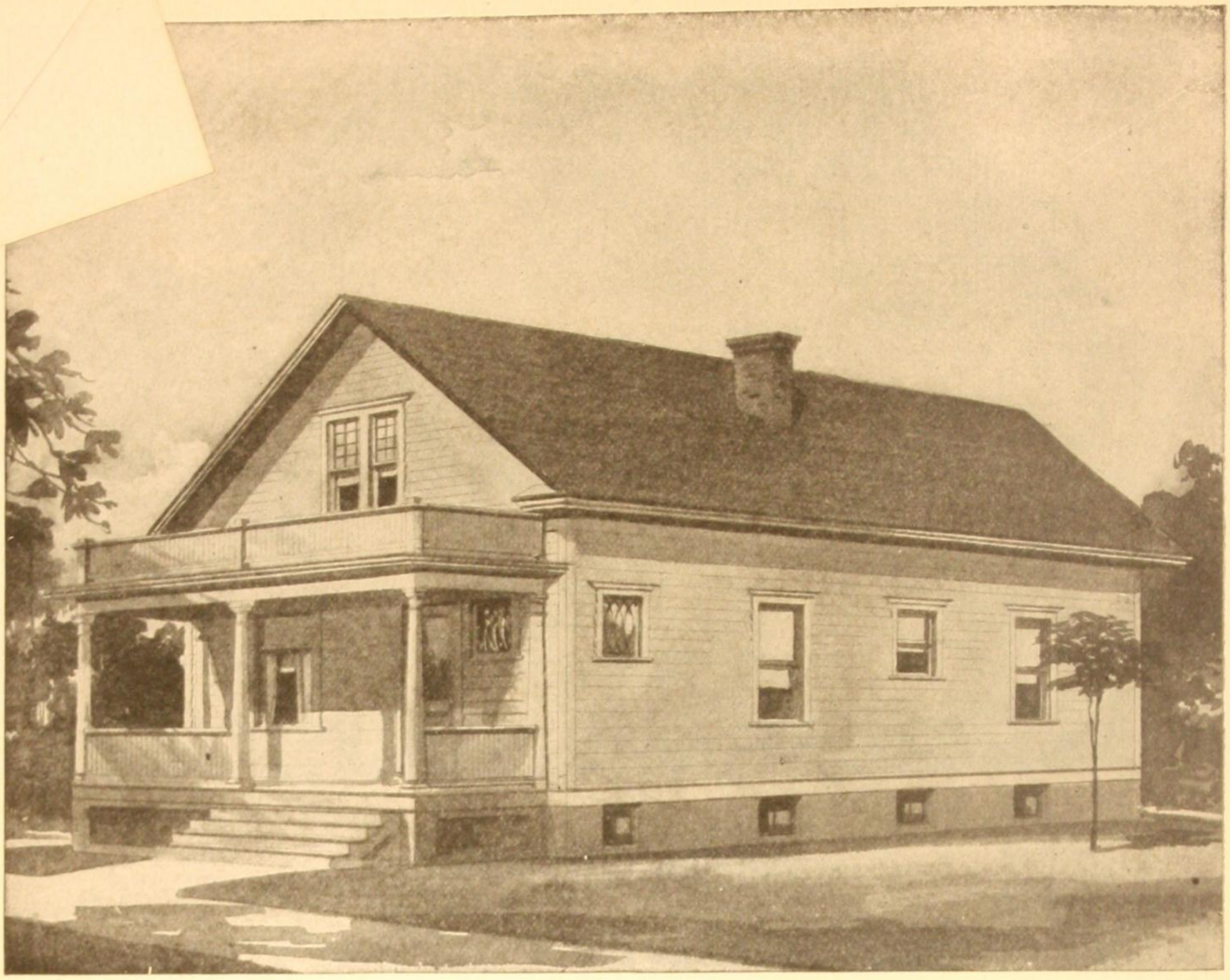
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

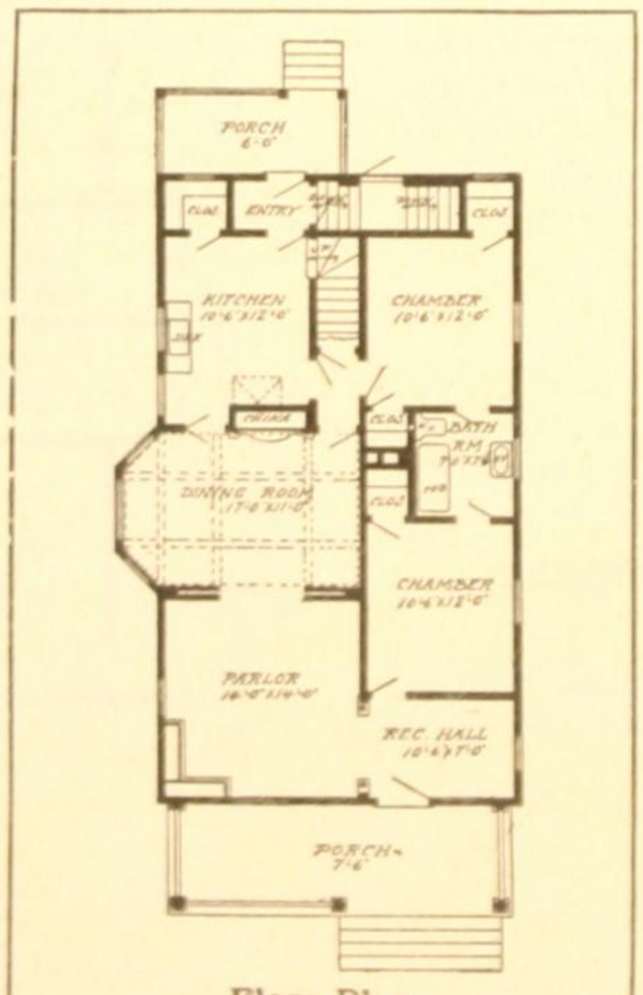


Second Floor Plan



DESIGN NUMBER 6045

Size: Width, 29 feet; length, 45 feet, exclusive of porches



Floor Plan

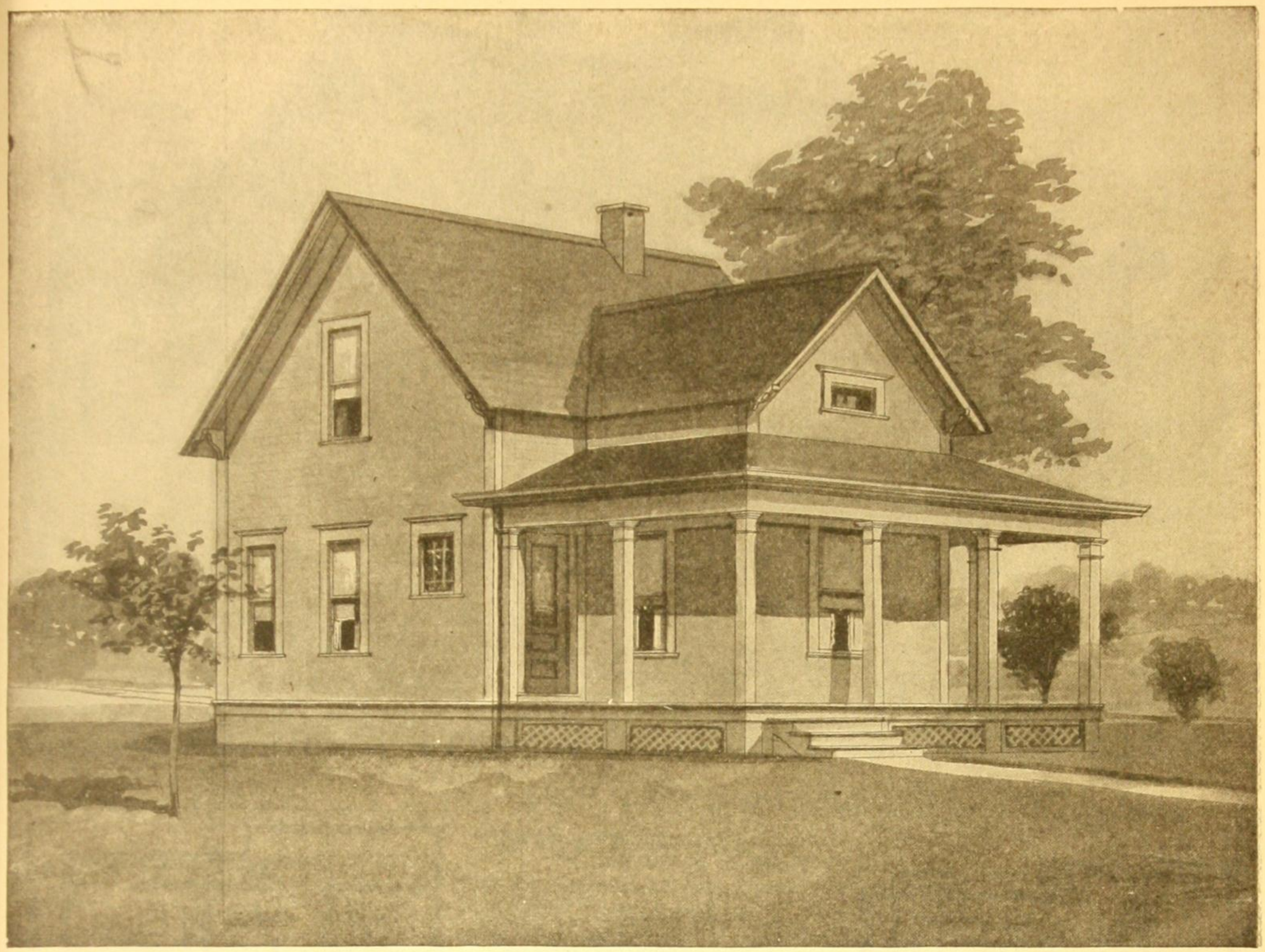
BLUE PRINTS consist of basement plan; attic and roof plan; floor plan, front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

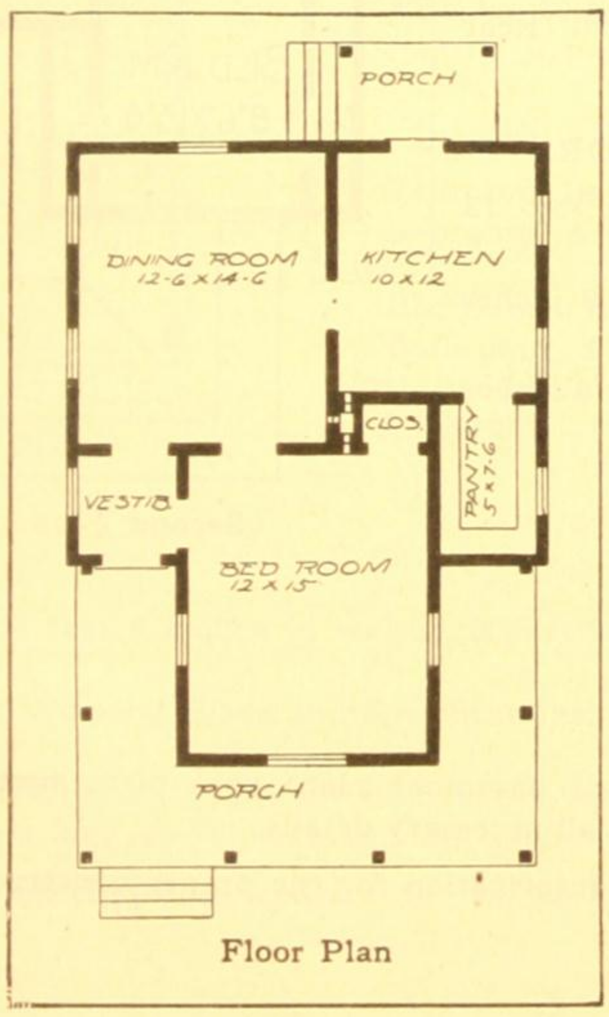
ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.



DESIGN NUMBER 6002

Size: width, 24 feet; length, 31 feet, exclusive of porches



Floor Plan

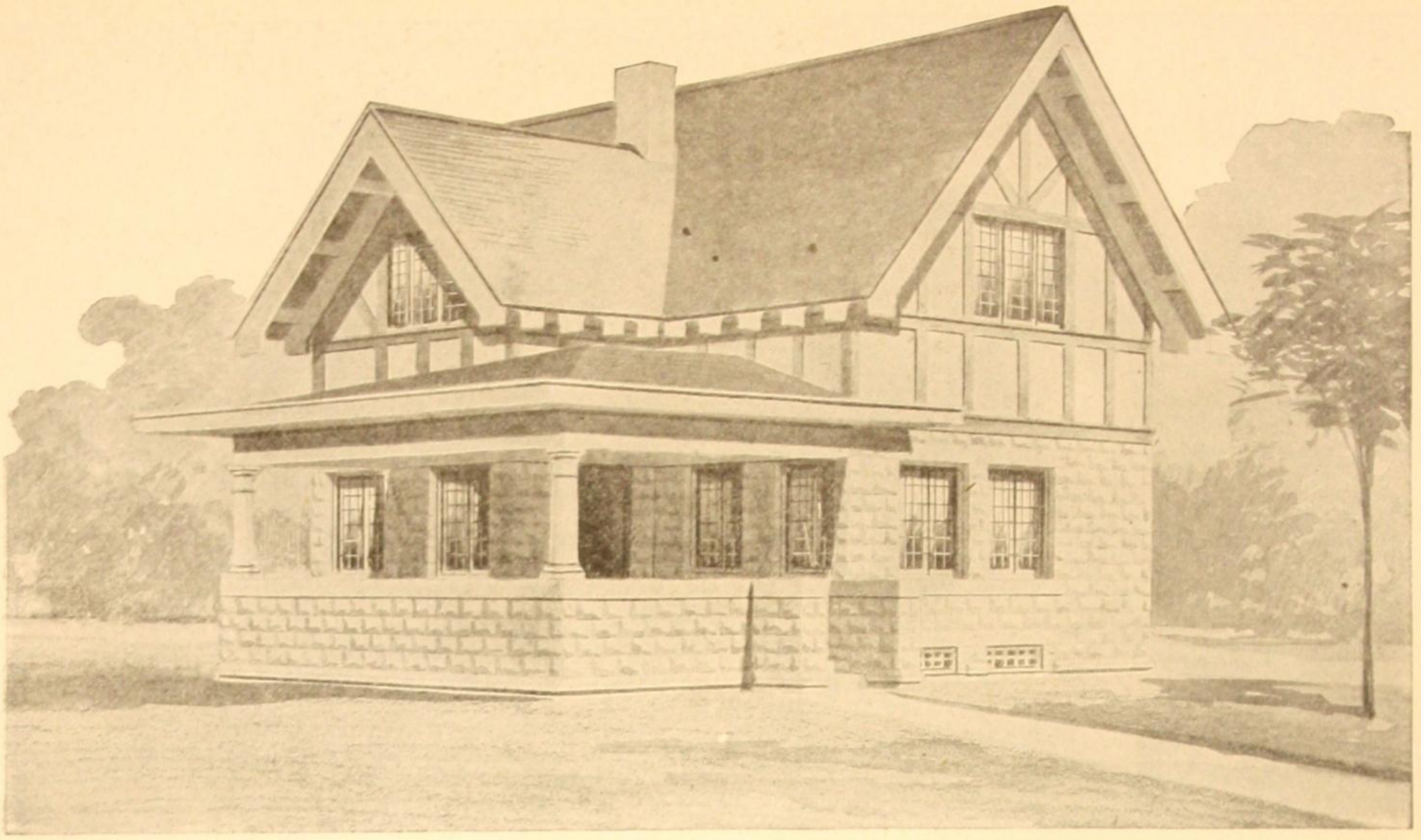
BLUE PRINTS consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY EIGHT DOLLARS

We mail plans and specifications the same day order is received.



Design No. 9093

The arrangement of this House is as follows:

FIRST FLOOR.

Living Room, 12 feet by 12 feet 9 inches.

Dining Room, 16 feet 6 inches by 12 feet.

Kitchen, 12 feet by 9 feet 9 inches.

Pantry, Front and Rear Porches.

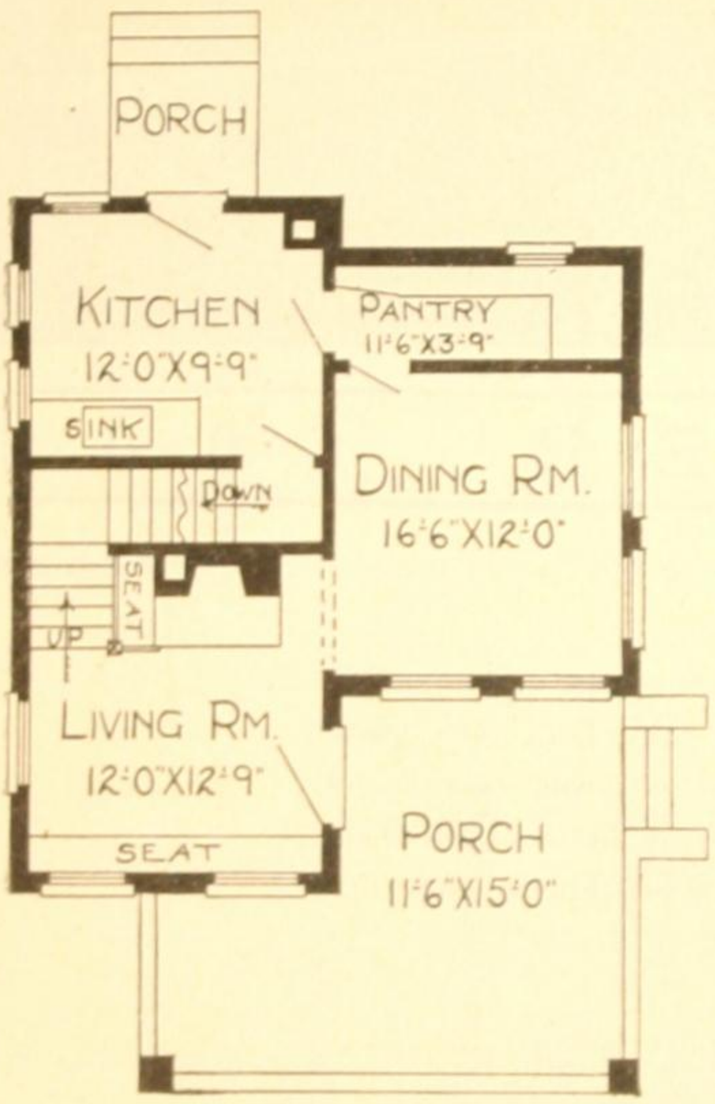
SECOND FLOOR.

Bedroom, 9 feet by 13 feet.

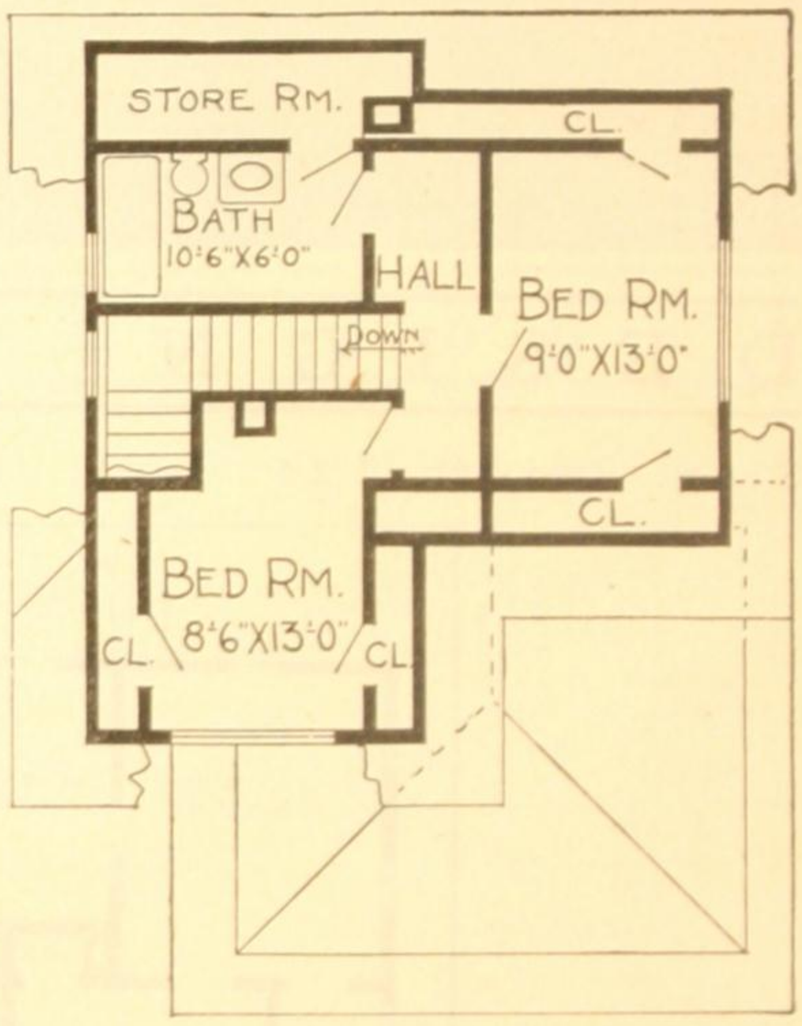
Bedroom, 8 feet 6 inches by 13 feet.

Bathroom, 10 feet 6 inches by 6 feet.

5 Closets.



First Floor Plan.



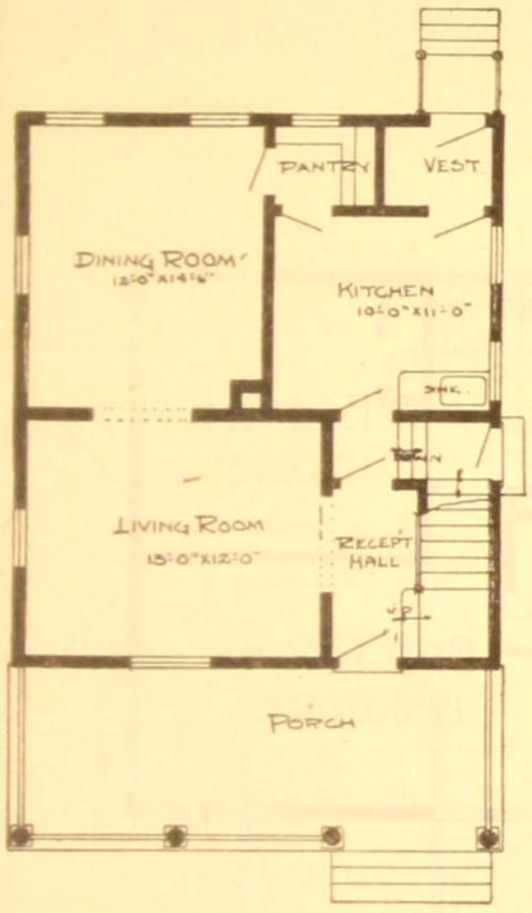
Second Floor Plan.

This Building is 25 feet 4 inches in width; 28 feet in length.

Price of Complete Working Plans and Specifications $15.00

The Blue Printed Working Plans for this House consist of basement plan; roof plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.



First Floor Plan.

Design No. 9043

The arrangement of this House is as follows:

FIRST FLOOR.

Reception Hall, 8 feet by 8 feet 6 inches.

Living Room, 15 feet by 12 feet.

Dining Room, 12 feet by 14 feet 6 inches.

Kitchen, 10 feet by 11 feet.

Pantry, Front and Rear Porches.

SECOND FLOOR.

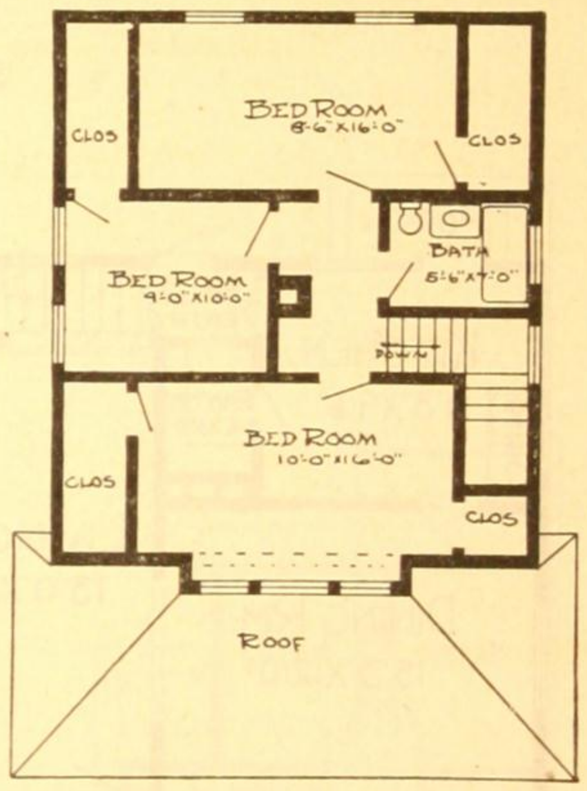
Bedroom, 10 feet by 16 feet.

Bedroom, 8 feet 6 inches by 16 feet.

Bedroom, 9 feet by 10 feet.

Bathroom, 5 feet 6 inches by 7 feet.

4 Closets.



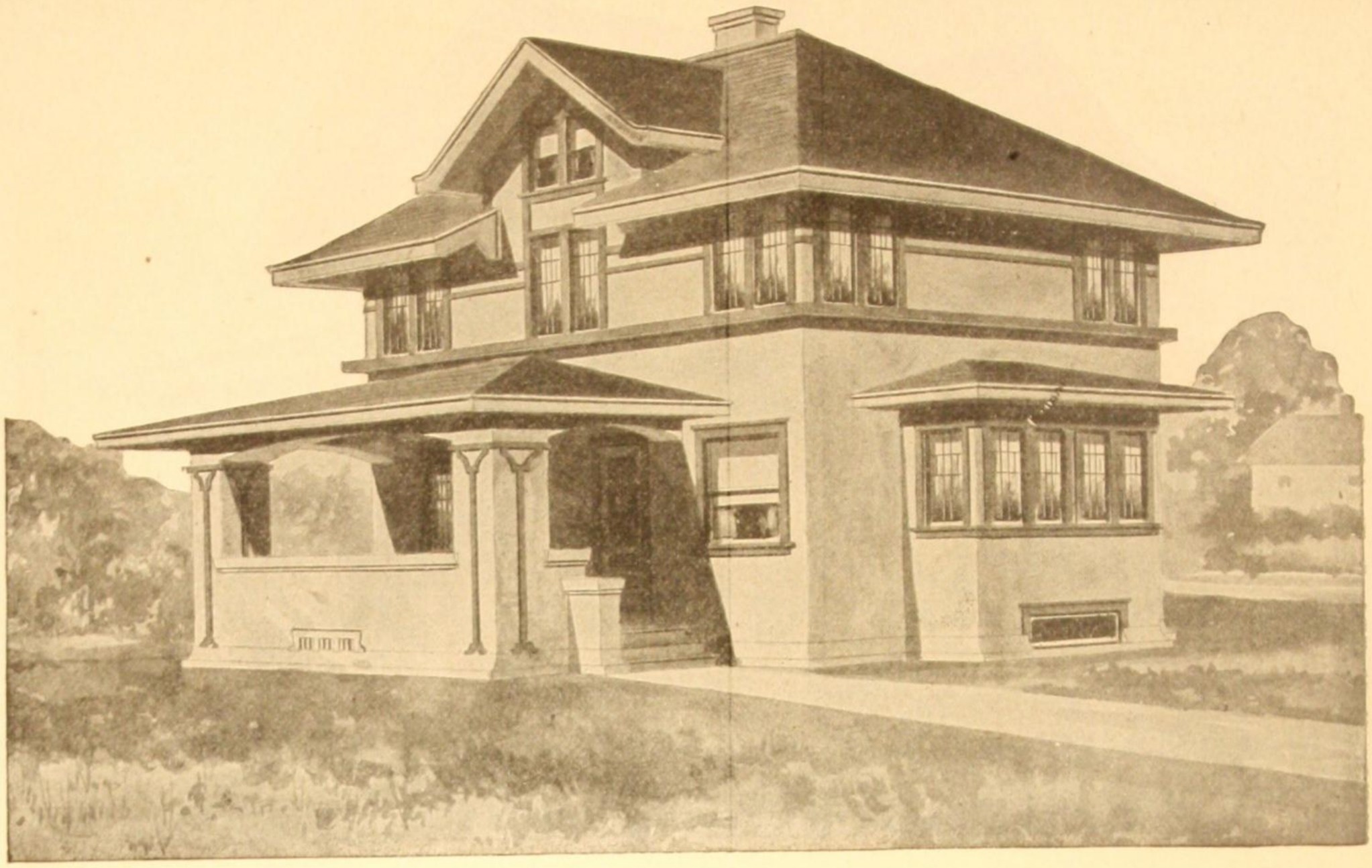
Second Floor Plan.

This Building is 24 feet 6 inches in width; 28 feet in length.

Price of Complete Working Plans and Specifications..... **$12.00**

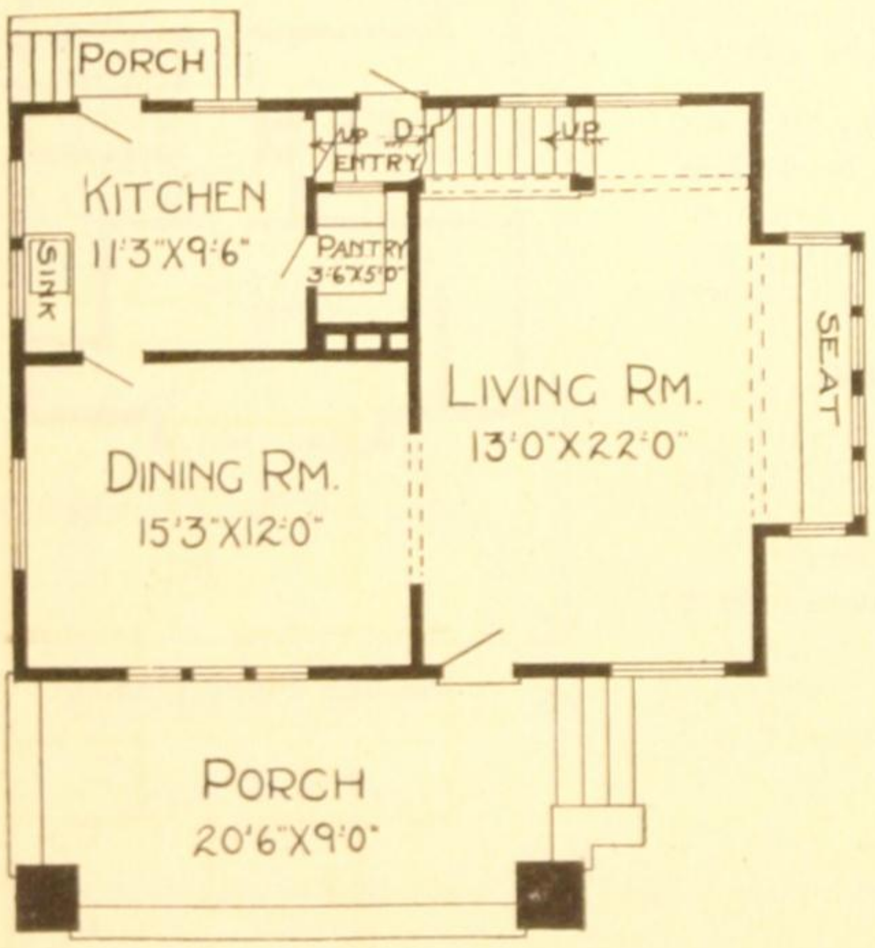
The Blue Printed Working Plans for this House consist of basement plan; roof plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.

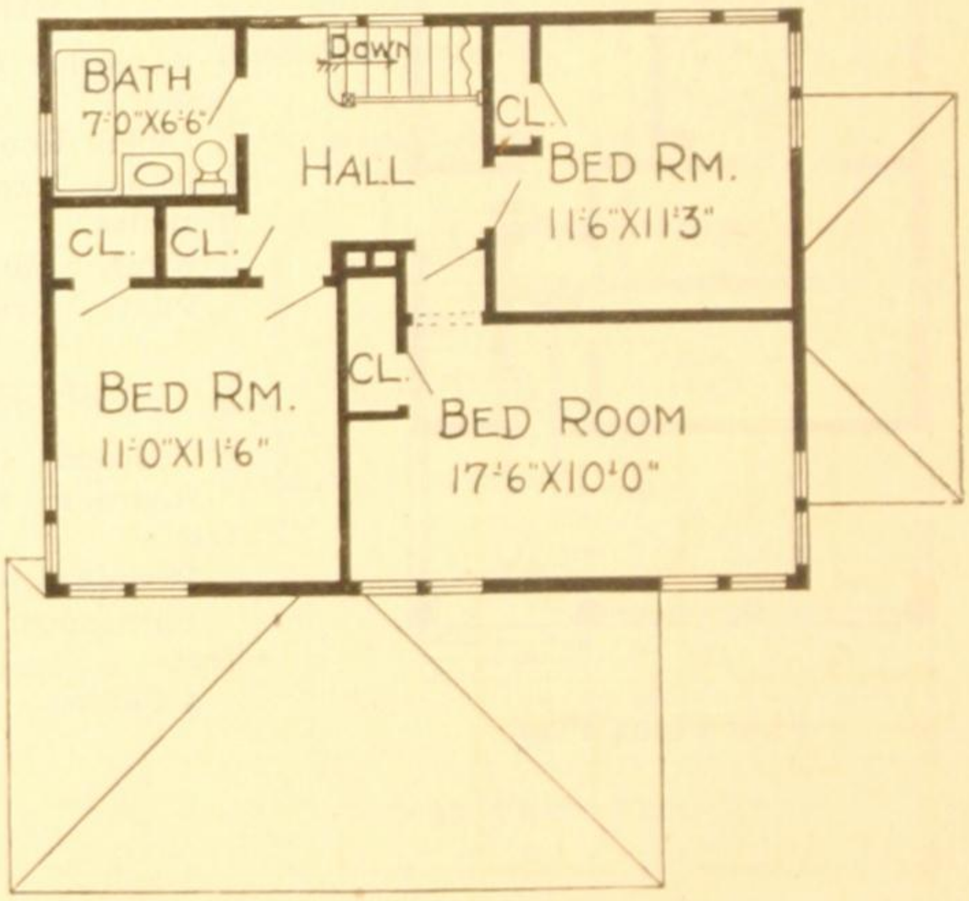


Design No. 8238

Size: Width, 34 feet; Length, 23 feet



First Floor Plan



Second Floor Plan

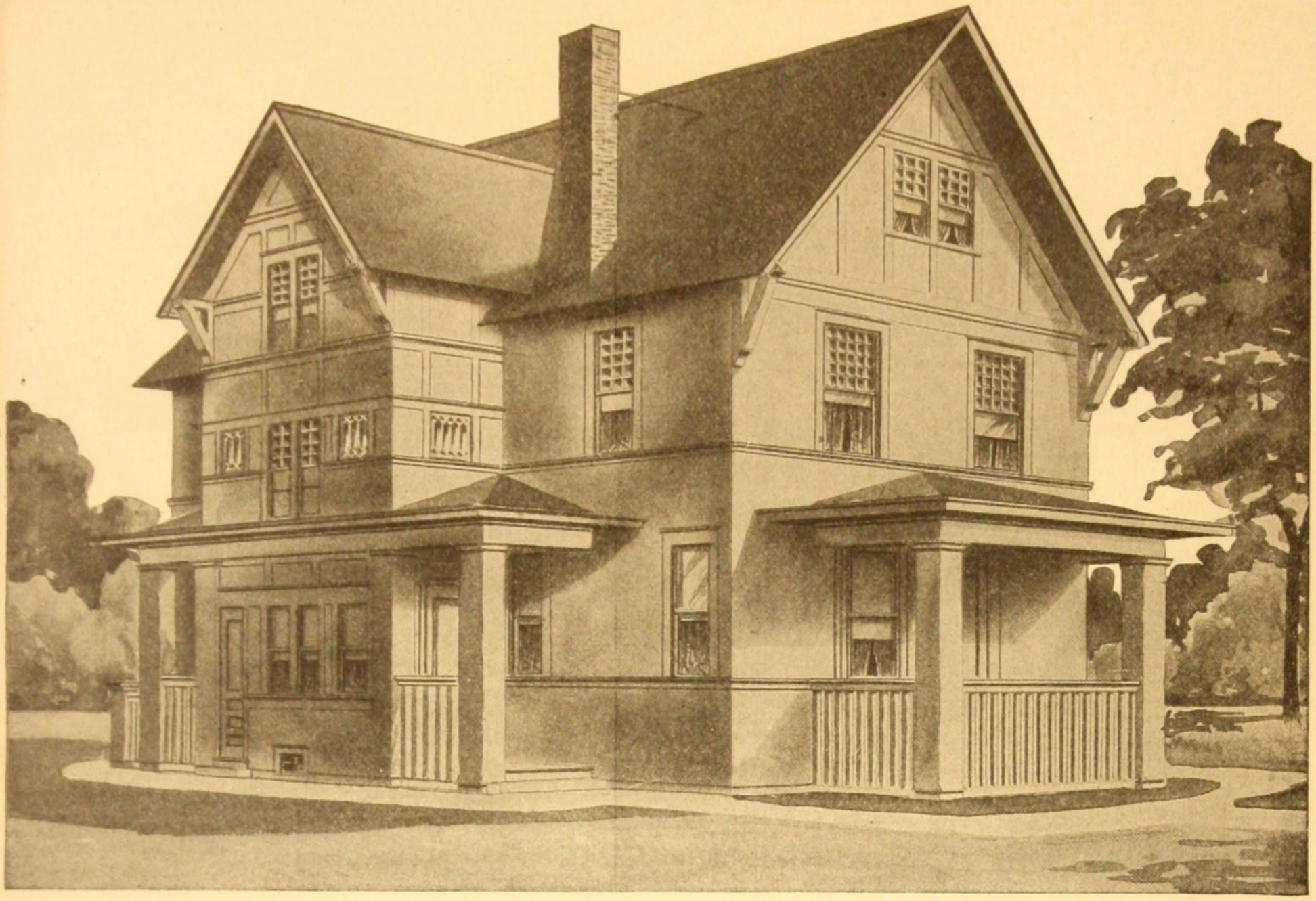
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

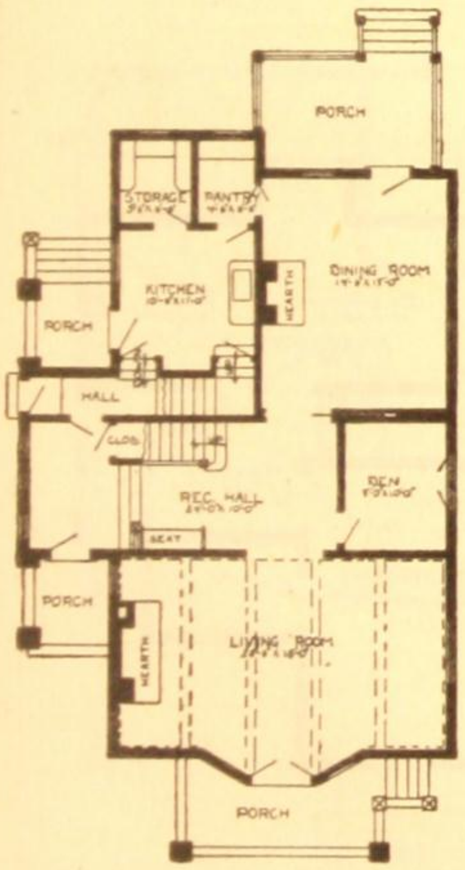
ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.



Design No. 8077

Size: Width, 34 feet; Length, 48 feet 8 inches



First Floor Plan

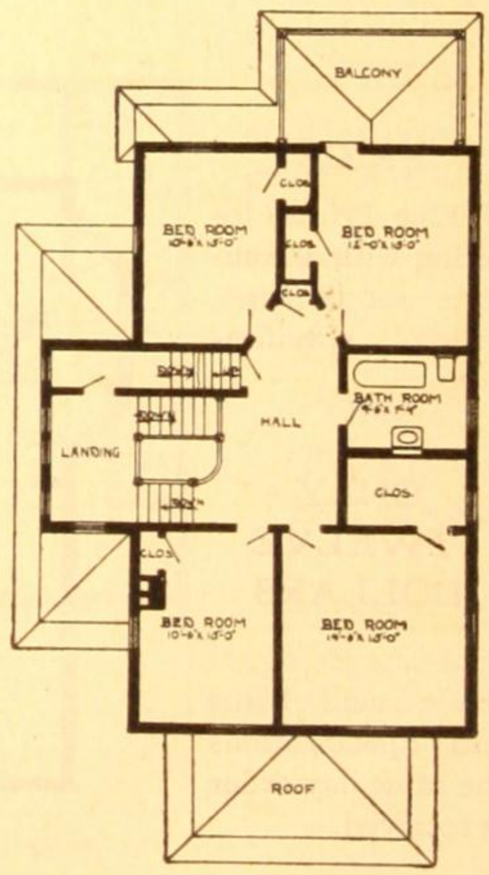
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

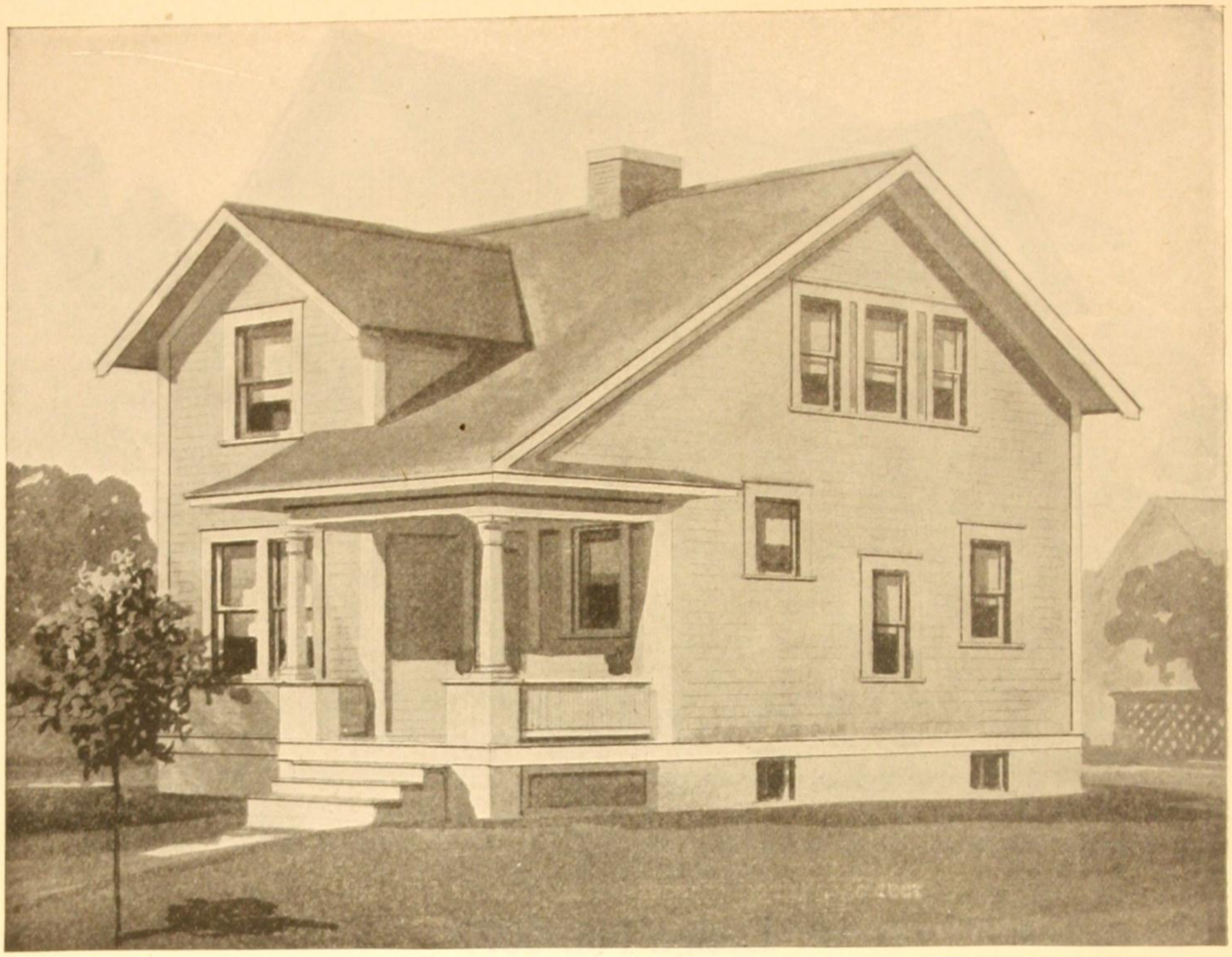
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.



Second Floor Plan



Design No. 7041

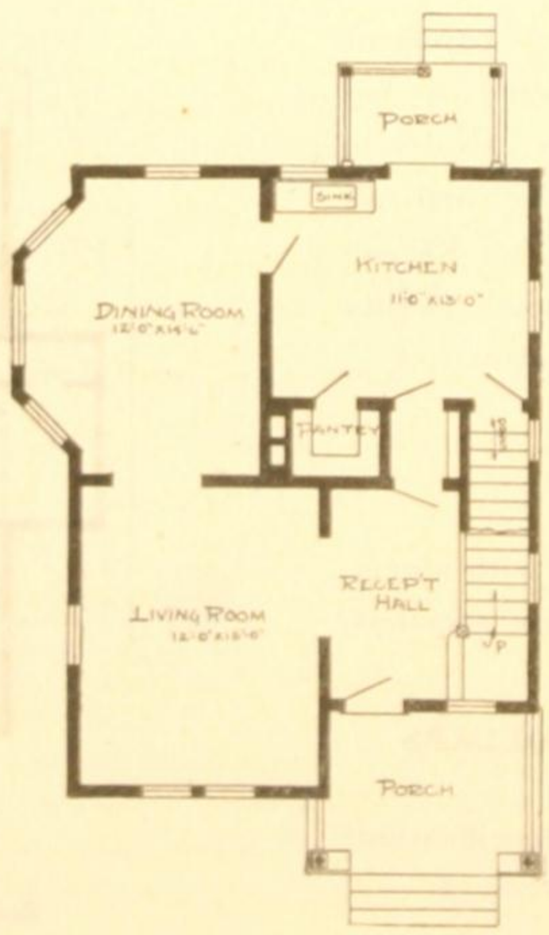
Size: Width, 26 feet 6 inches; Length, 31 feet 6 inches, exclusive of porches

PRICE

of Blue Prints, together with a complete set of typewritten specifications

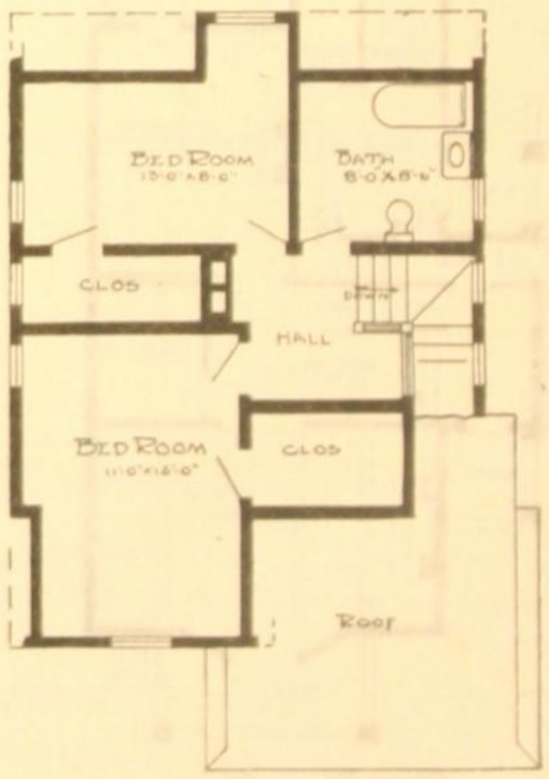
ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

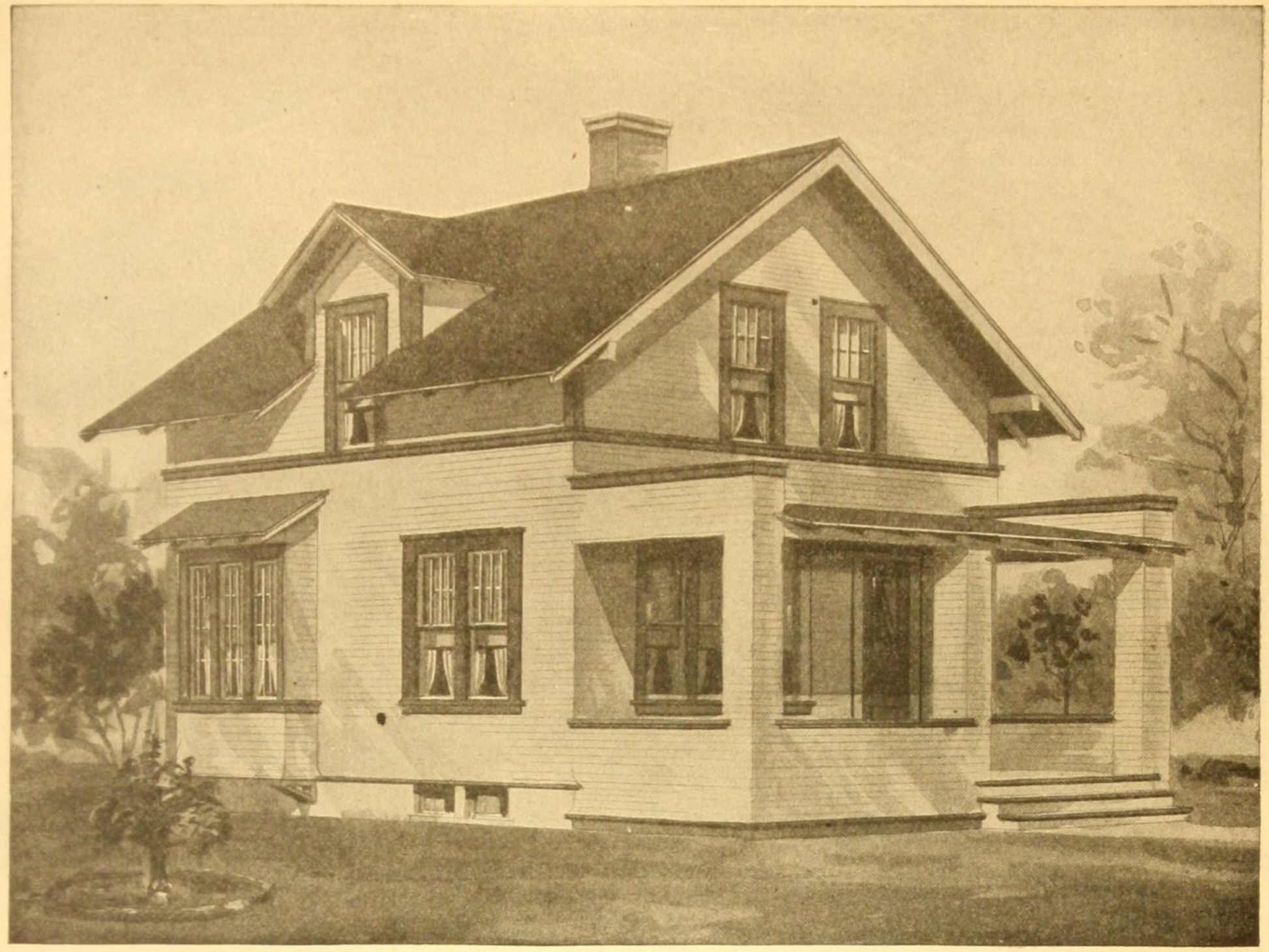


First Floor Plan

Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

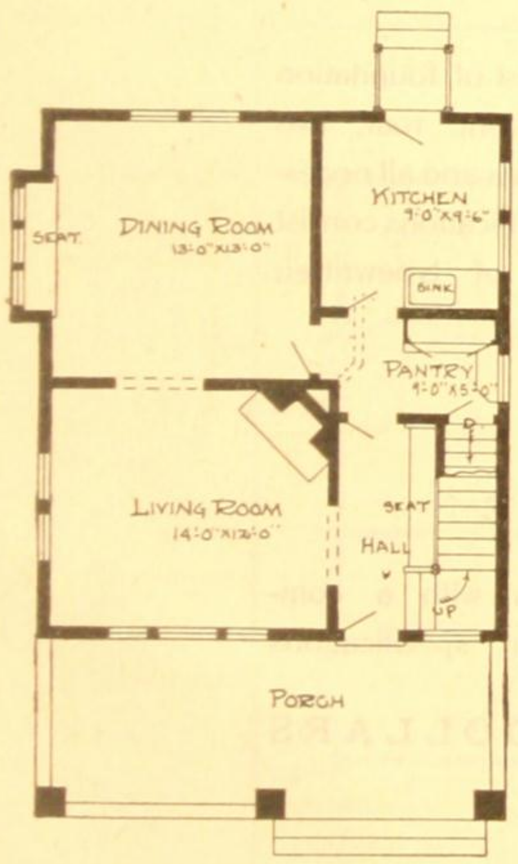


Second Floor Plan



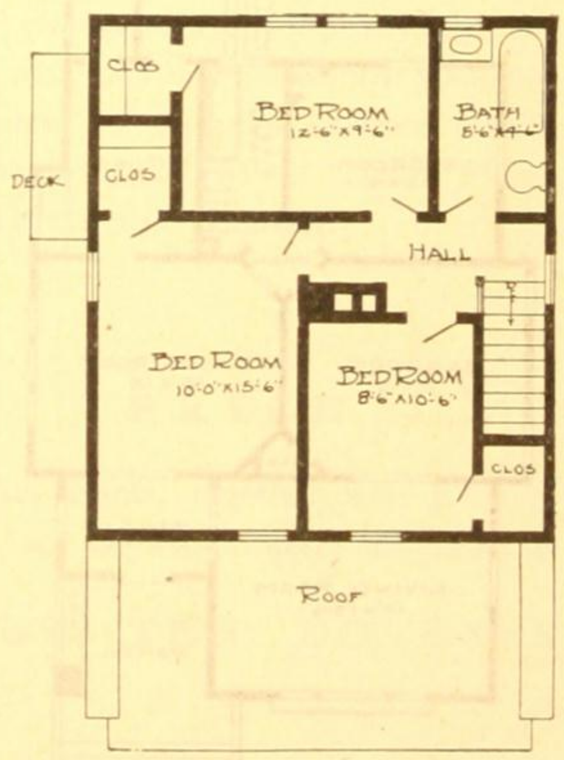
Design No. 7084

Size: Width, 25 feet; Length, 26 feet 6 inches, exclusive of porches



First Floor Plan

Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of of about twenty pages of typewritten matter.



Second Floor Plan

PRICE

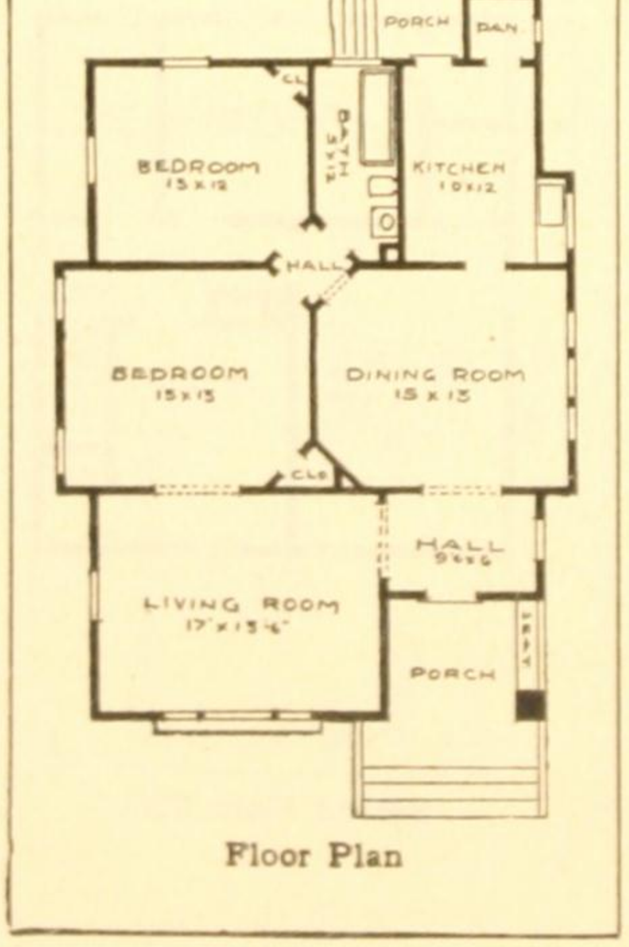
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWLEVE DOLLARS

We mail Plans and Specifications the same day order is received.

DESIGN NUMBER 6060

Size: Width, 31 feet, 6 inches; length, 40 feet, 6 inches exclusive of porches



Floor Plan

BLUE PRINTS consist of foundation plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

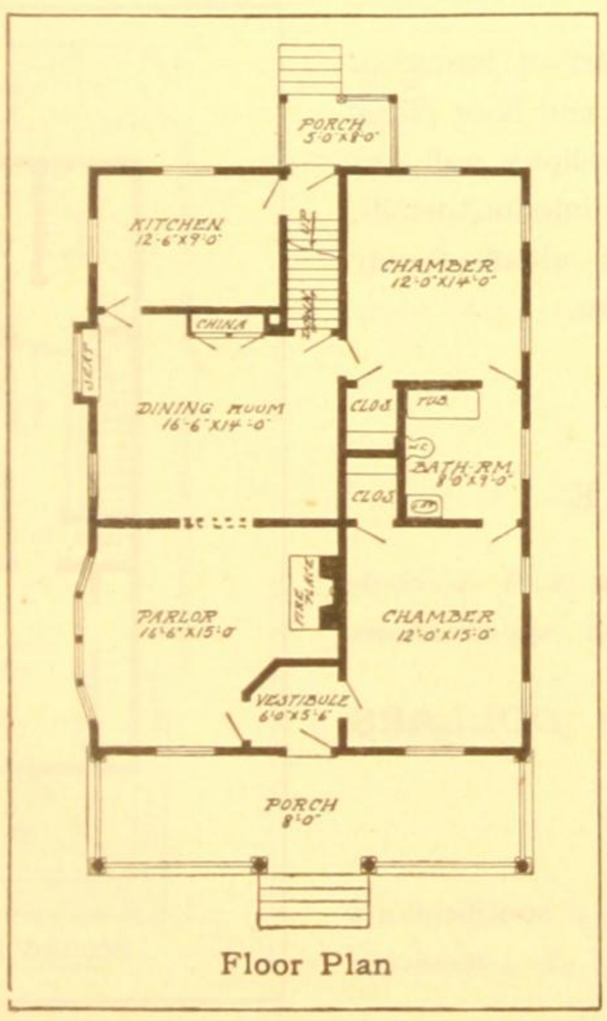
of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.

DESIGN NUMBER 6042

Size: width, 31 feet; length, 40 feet, exclusive of porches



Floor Plan

BLUE PRINTS consist of basement plan; attic and roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

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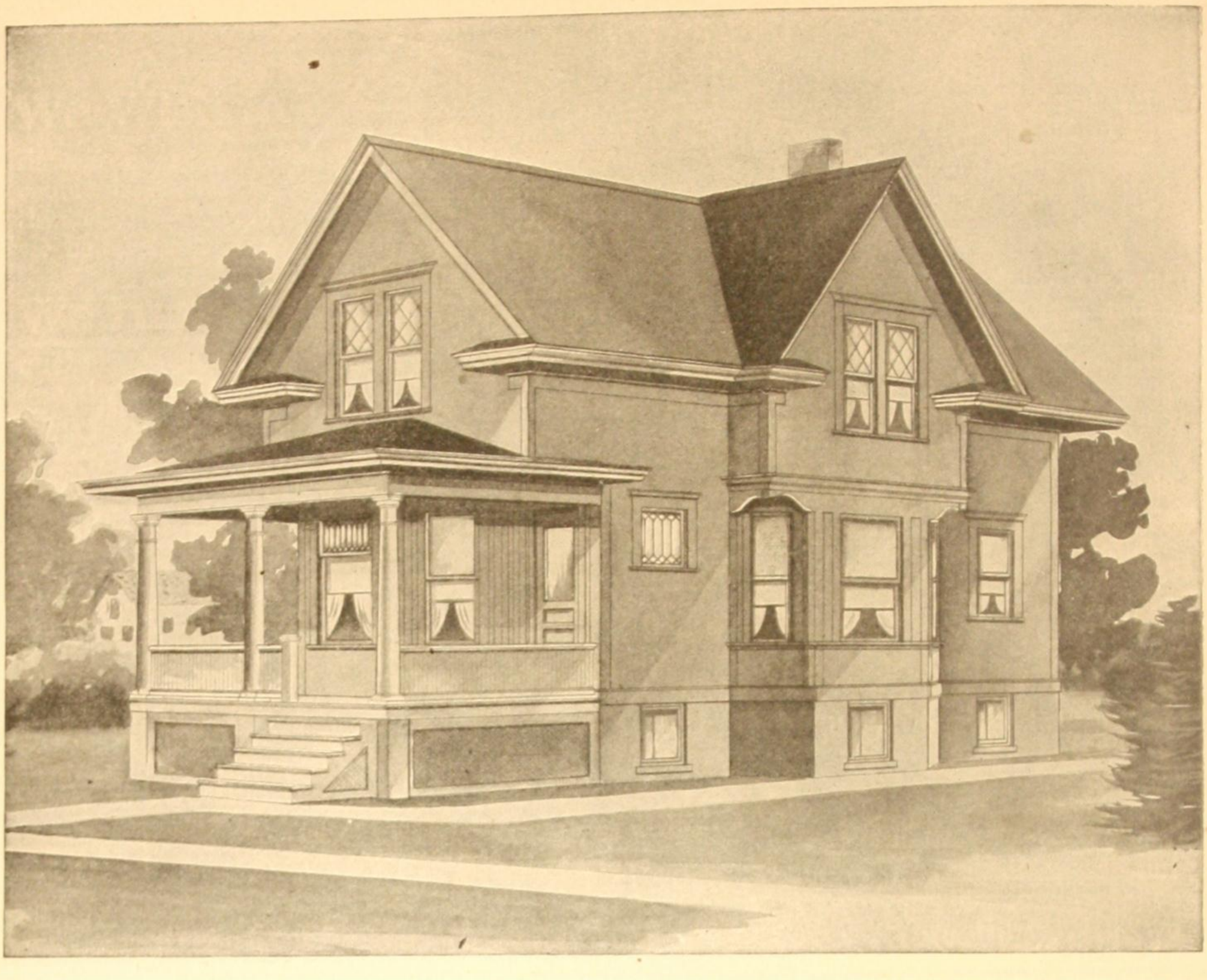
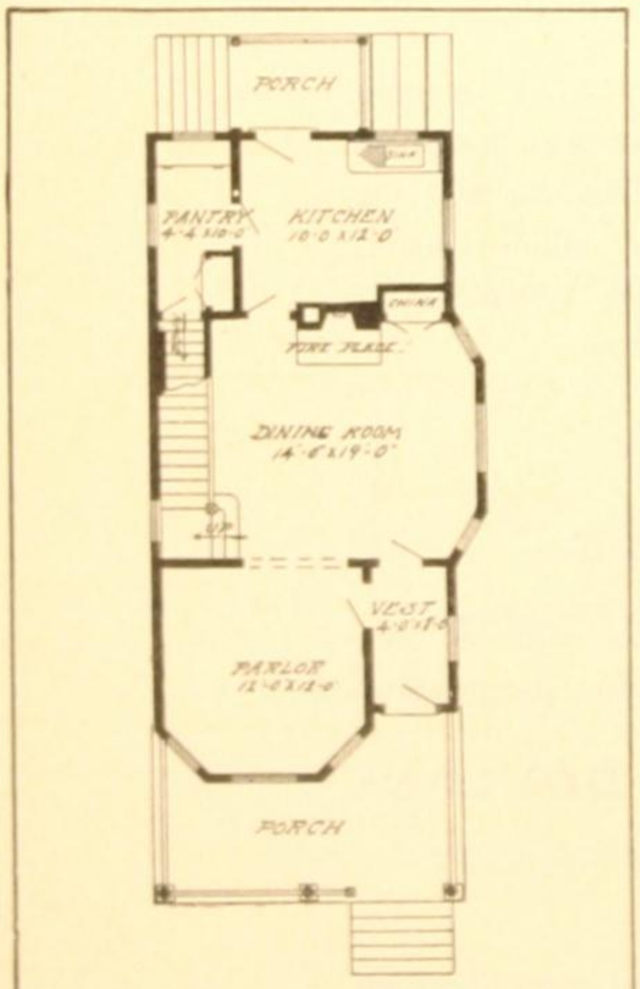


DESIGN NUMBER 6074

Size: width, 20 feet, length, 38 feet, exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

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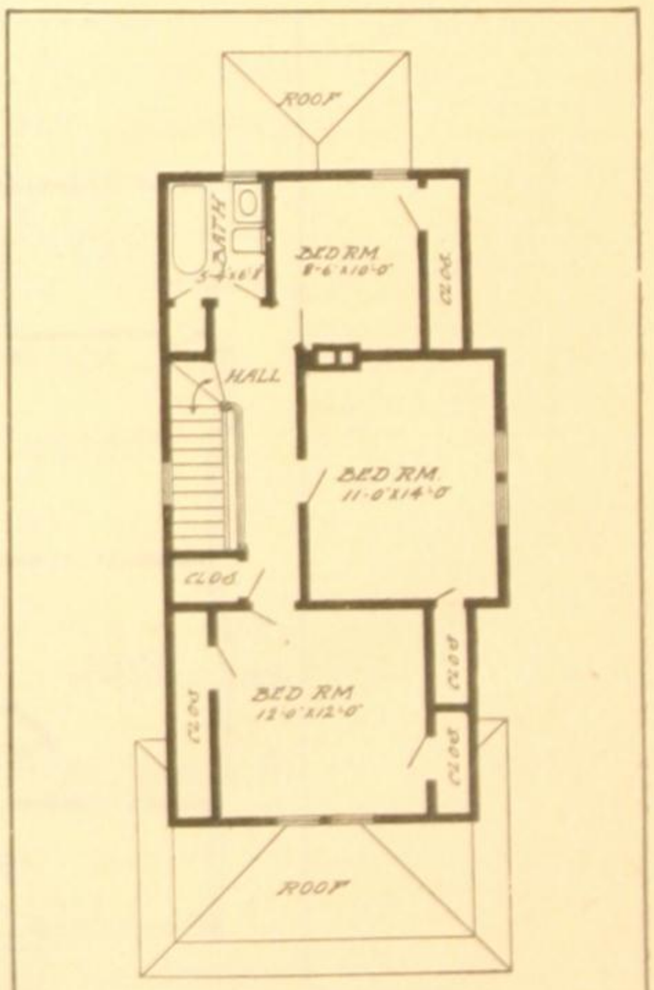
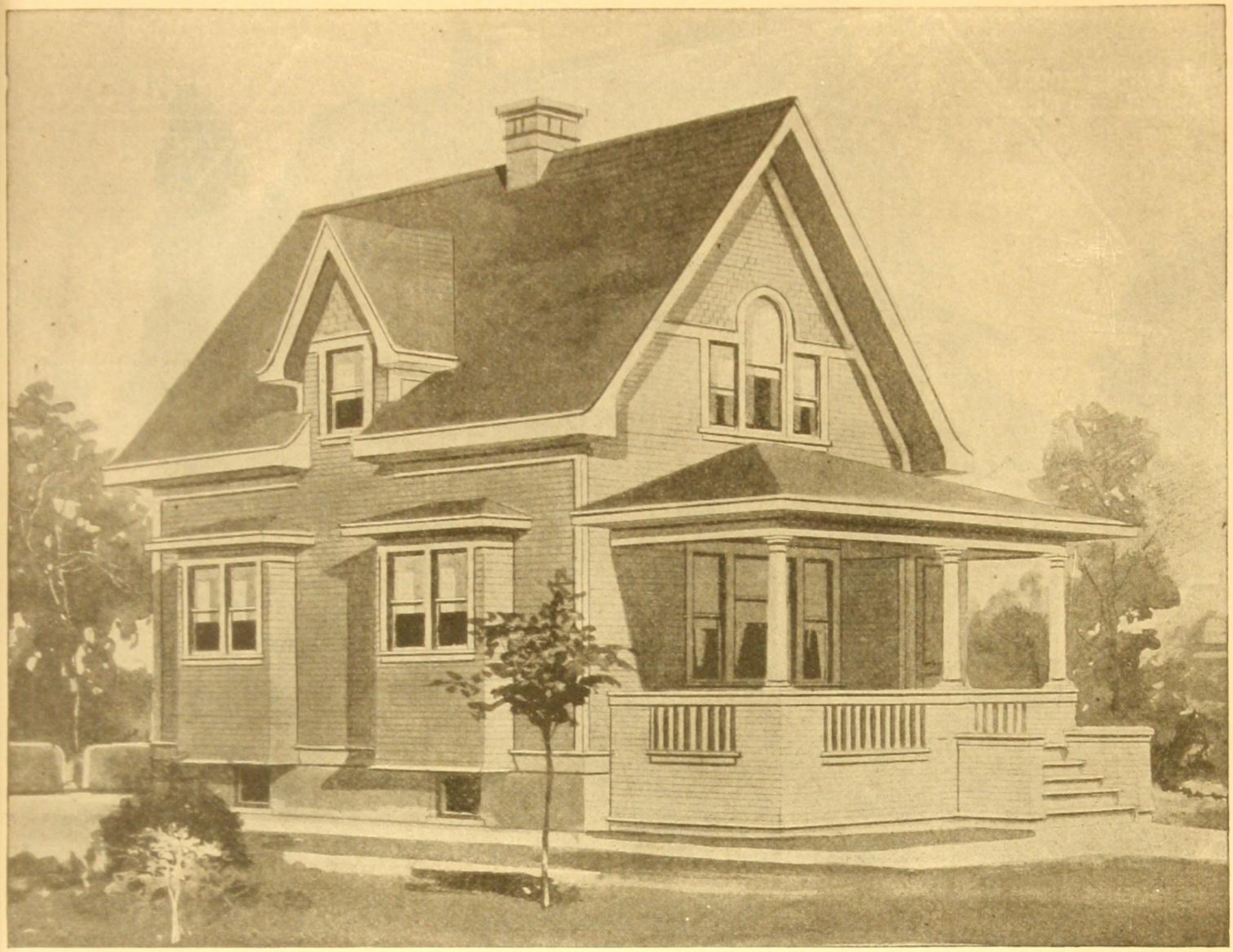
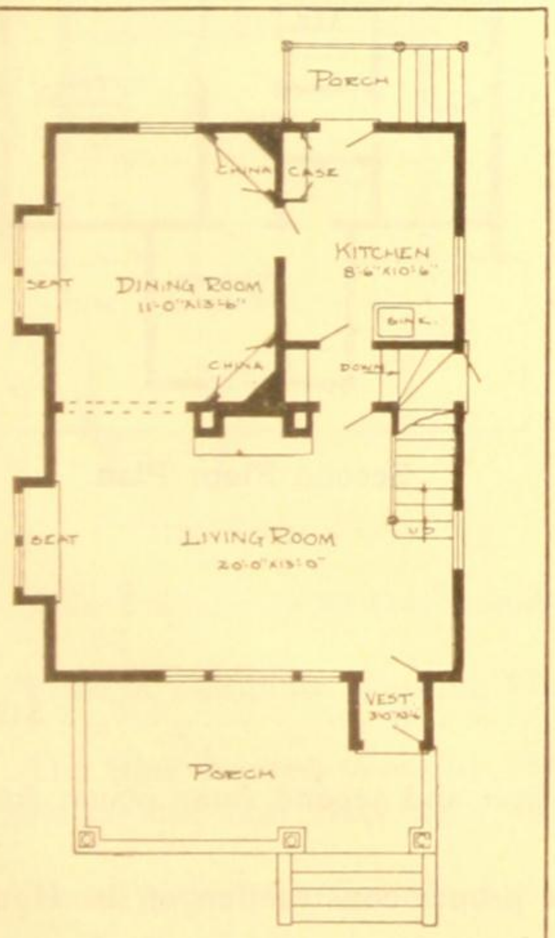


Second Floor Plan



DESIGN NUMBER 6054

Size: width, 21 feet; length, 28 feet, exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

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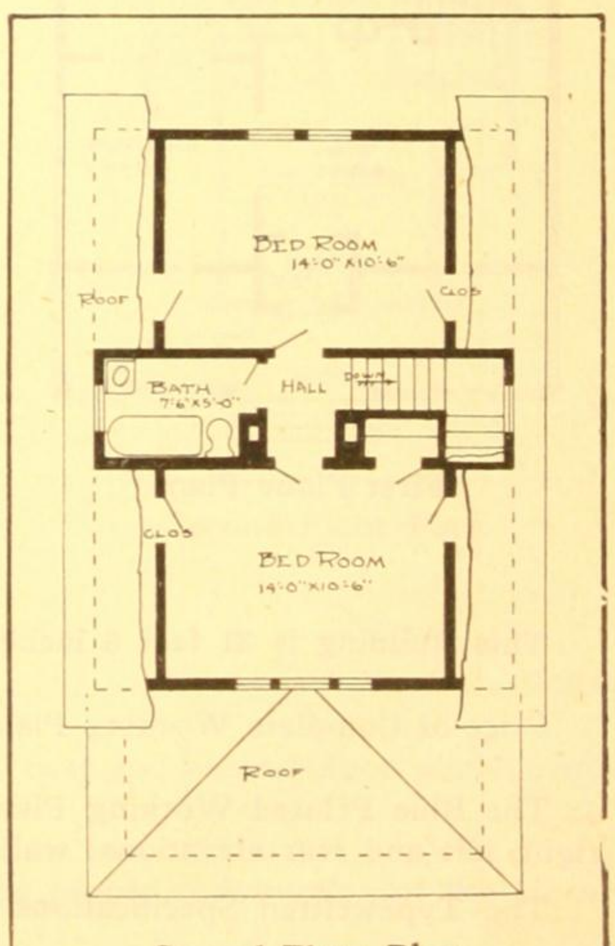
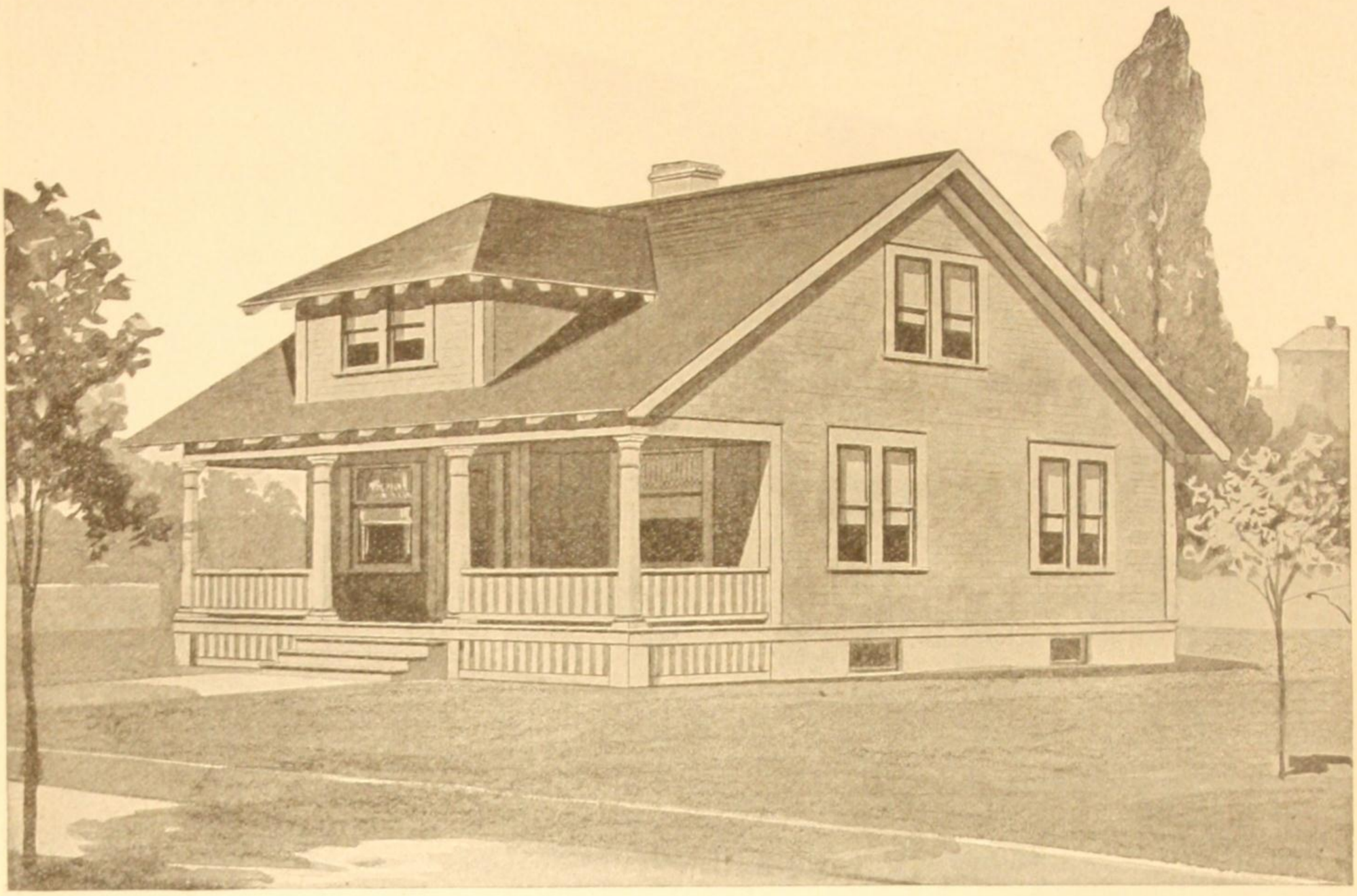


Second Floor Plan



Design No. 9080

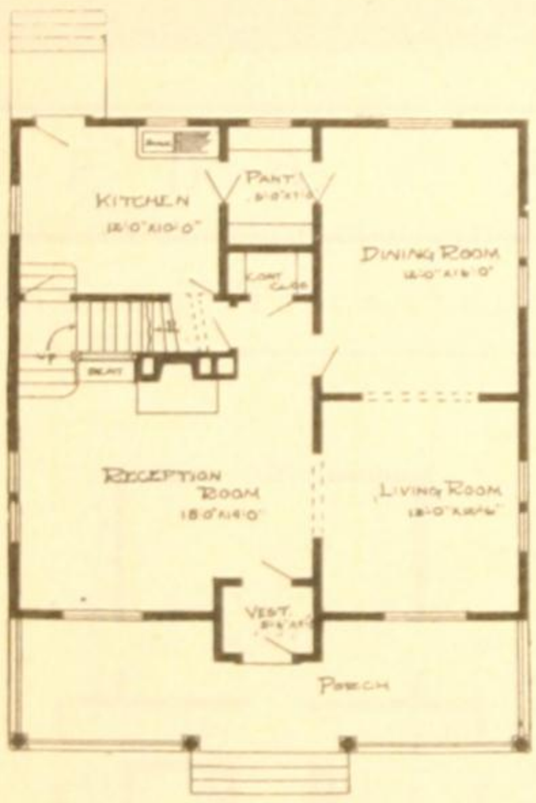
The arrangement of this House is as follows:

FIRST FLOOR.

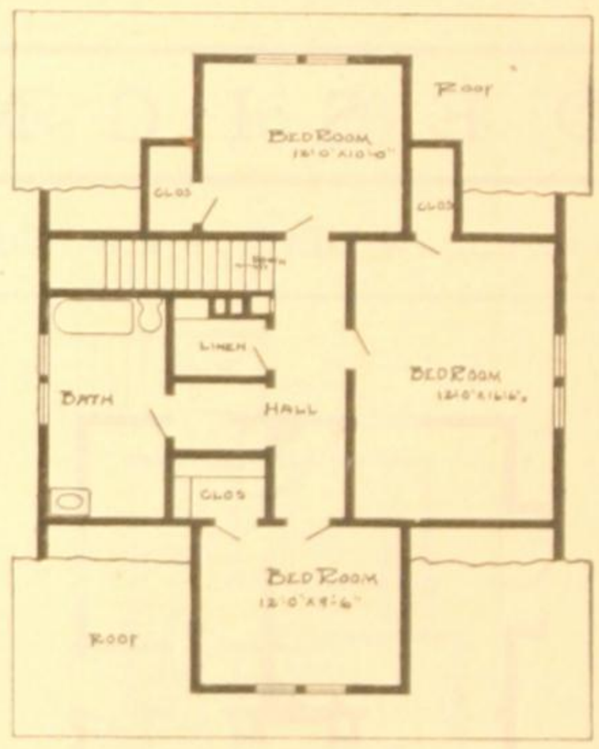
Reception Hall, 18 feet by 14 feet.
Living Room, 12 feet by 12 feet 6 inches.
Dining Room, 12 feet by 6 feet.
Kitchen, 12 feet by 10 feet.
Pantry and Front Porch.

SECOND FLOOR.

Bedroom, 12 feet by 9 feet 6 inches.
Bedroom, 12 feet by 16 feet 6 inches.
Bedroom, 12 feet by 10 feet.
Bathroom, 7 feet by 13 feet.
5 Closets.



First Floor Plan.



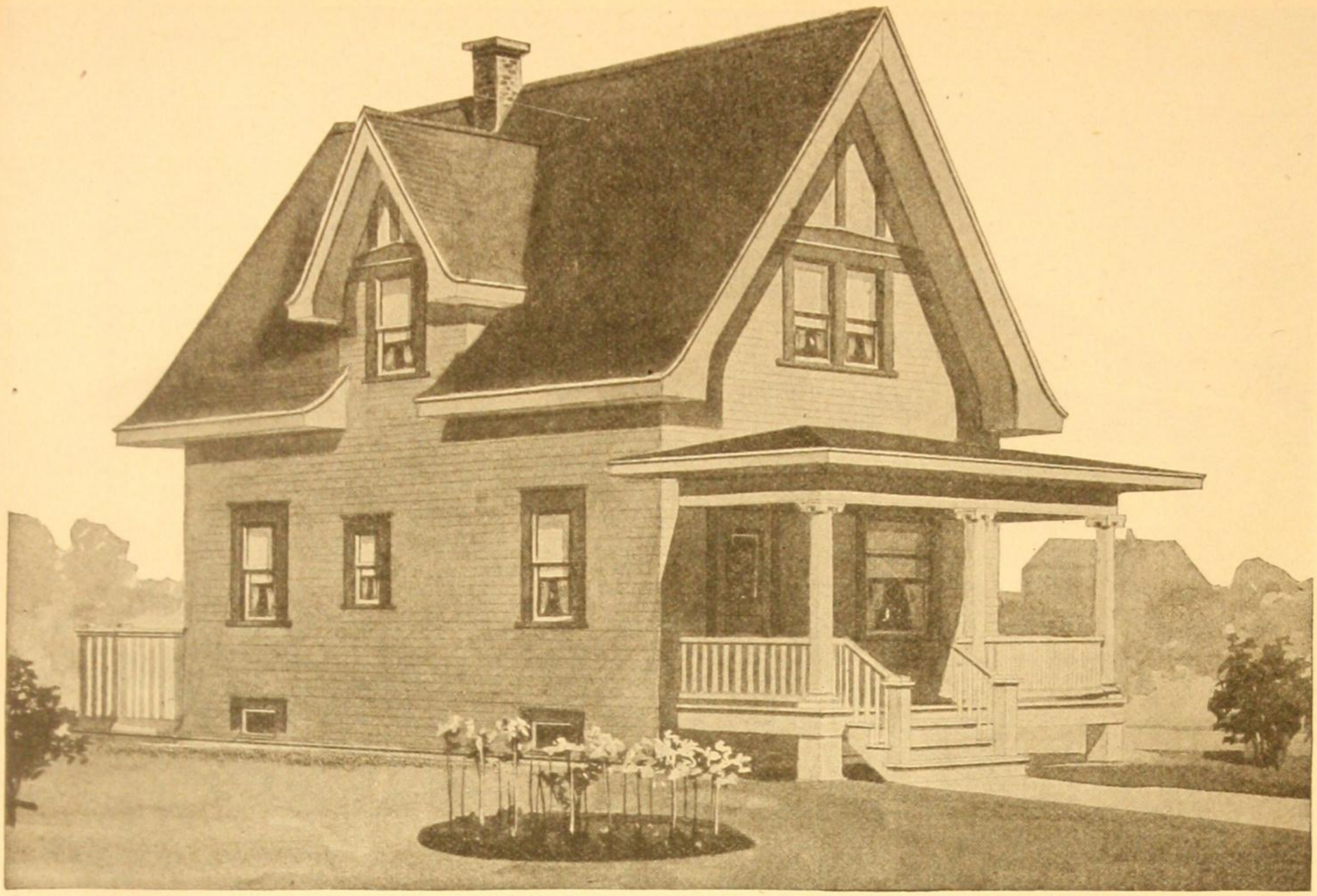
Second Floor Plan.

This Building is 31 feet 6 inches in width; 30 feet in length.

Price of Complete Working Plans and Specifications $12.00

The Blue Printed Working Plans for this House consist of basement plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.



Design No. 9089

The arrangement of this House is as follows:

FIRST FLOOR.

Reception Hall, 6 feet 6 inches by 14 feet.

Living Room, 12 feet by 14 feet.

Dining Room, 12 feet by 14 feet 6 inches.

Kitchen, 9 feet by 11 feet.

Pantry, Front and Rear Porches.

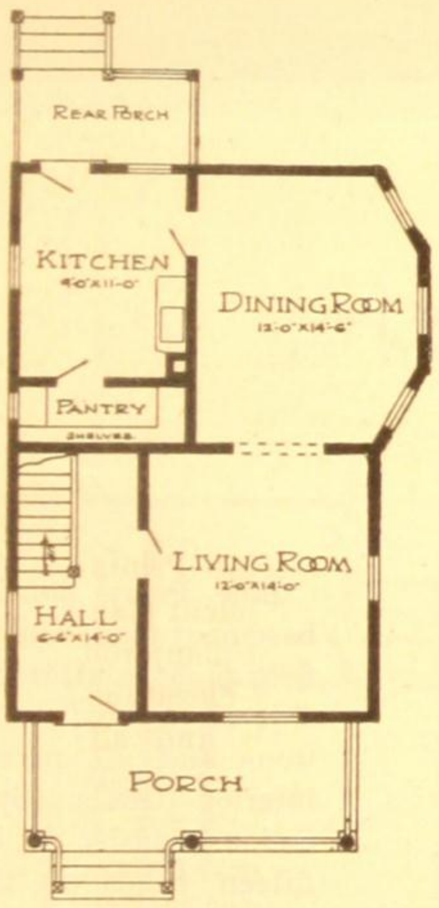
SECOND FLOOR.

Bedroom, 11 feet by 11 feet 6 inches.

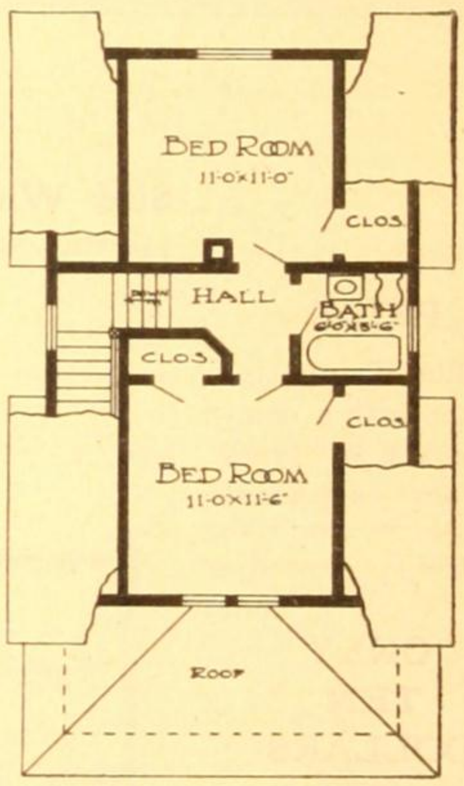
Bedroom, 11 feet by 11 feet.

Bathroom, 6 feet by 5 feet 6 inches.

3 Closets.



First Floor Plan.



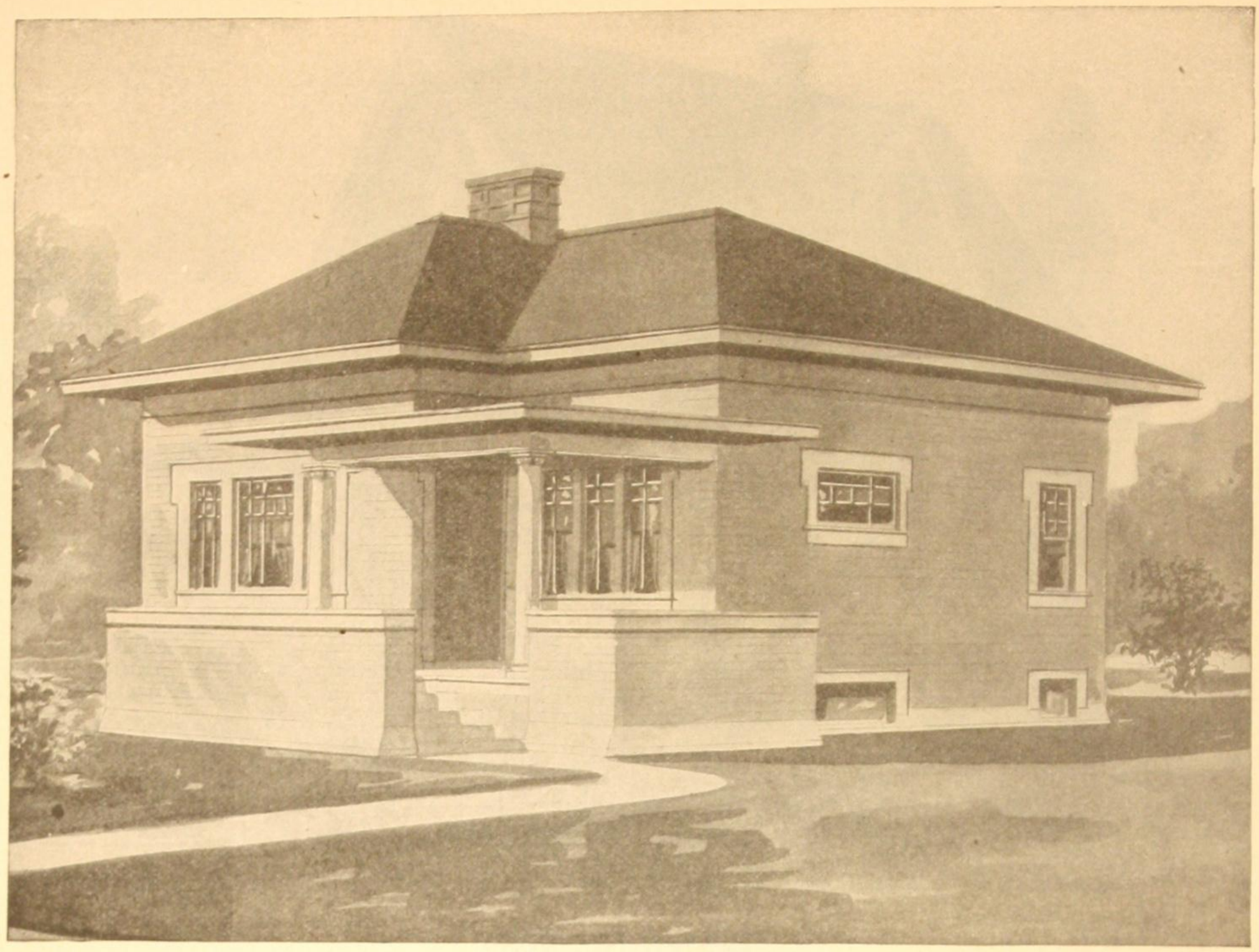
Second Floor Plan.

This Building is 22 feet 6 inches in width; 30 feet in length.

Price of Complete Working Plans and Specifications..... $10.00

The Blue Printed Working Plans for this House consist of basement plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.



Design No. 7093

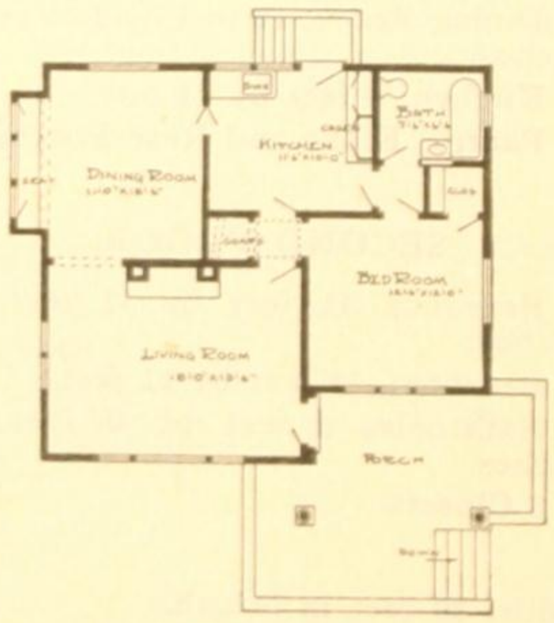
Size: Width, 34 feet; Length, 28 feet 6 inches, exclusive of porch

PRICE

of Blue Prints, together with a complete set of typewritten specifications

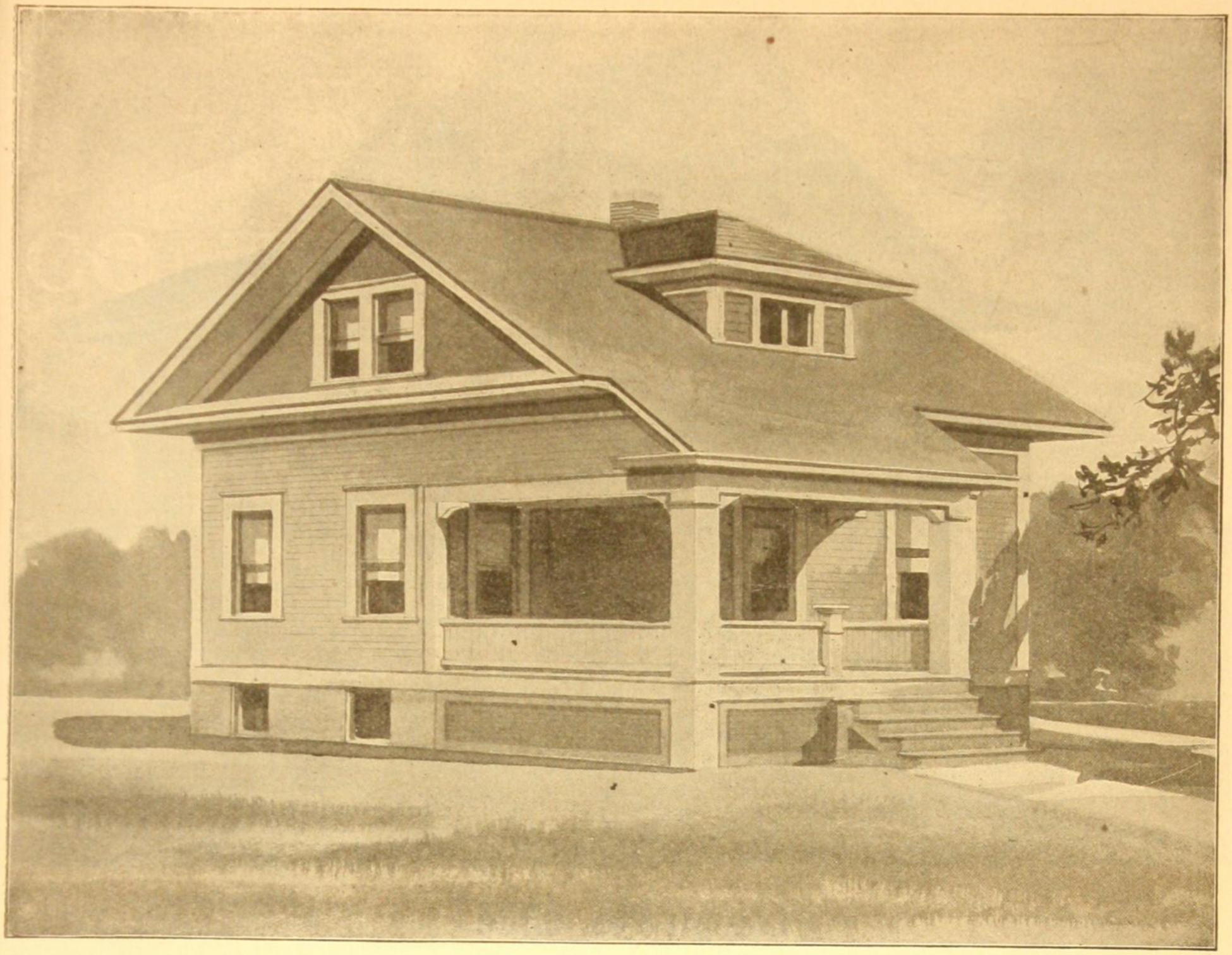
ONLY TEN DOLLARS

We mail Plans and Specifications the same day order is received.



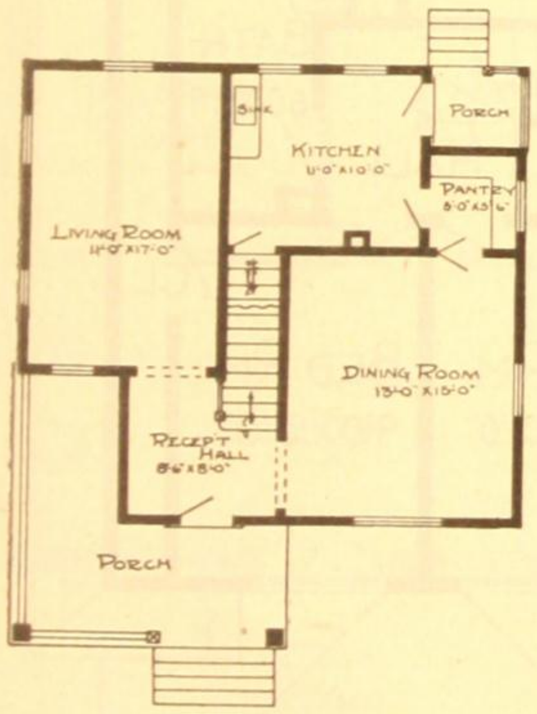
Floor Plan

Blue Prints consist of basement plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.



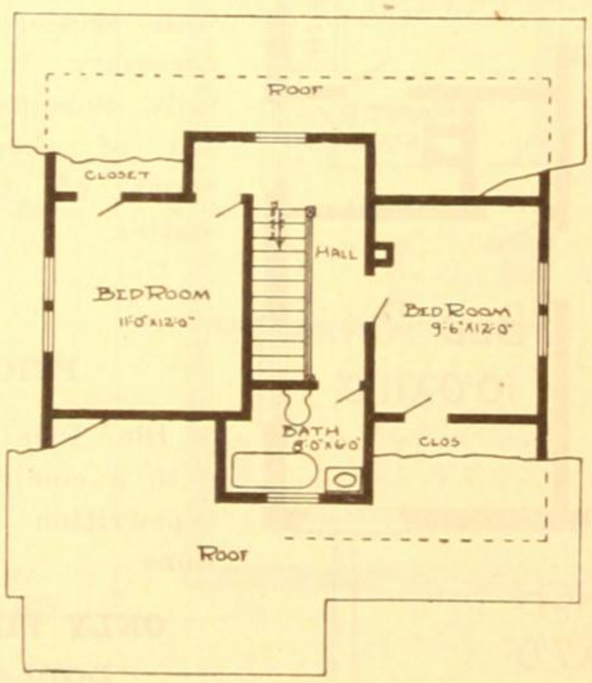
Design No. 7024

Size: Width, 29 feet; Length, 26 feet 6 inches, exclusive of porch



First Floor Plan

Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



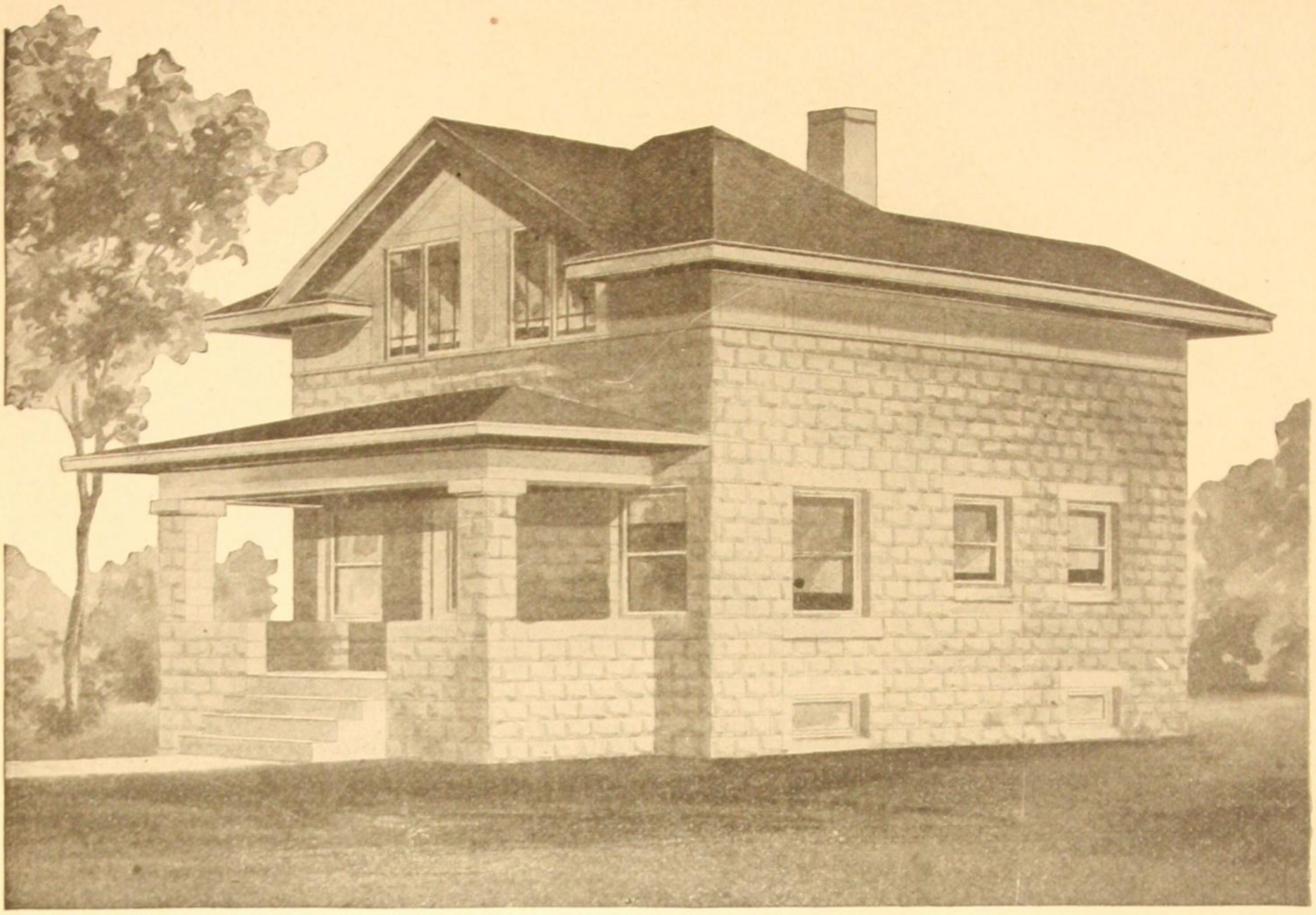
Second Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

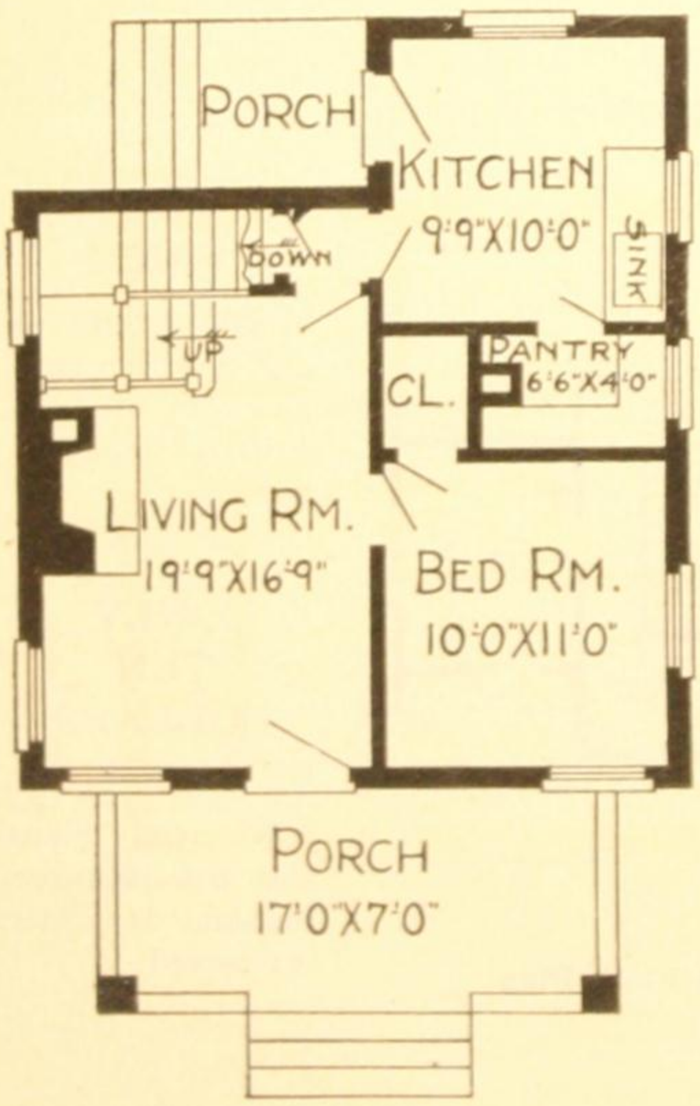
ONLY TEN DOLLARS

We mail Plans and Specifications the same day order is received.



Design No. 8224

Size: Width, 24 feet; Length, 27 feet 4 inches



First Floor Plan

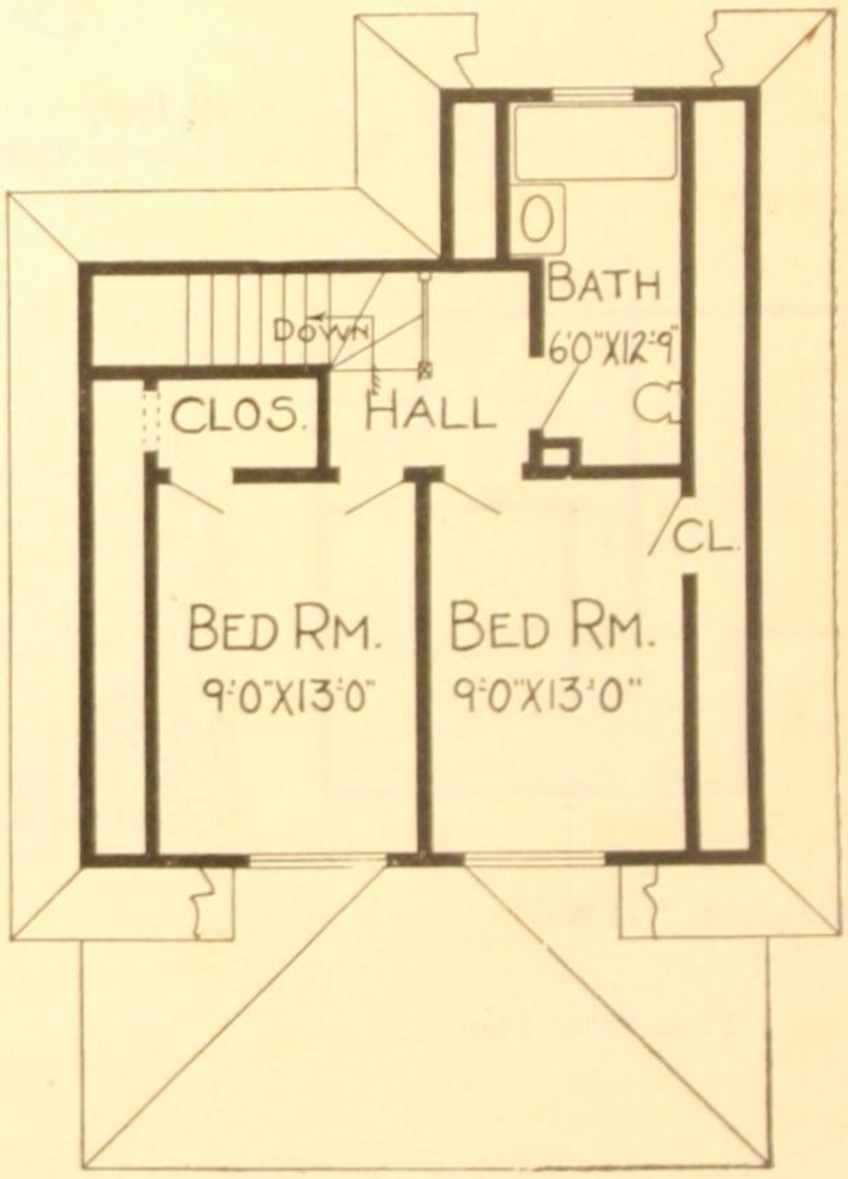
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

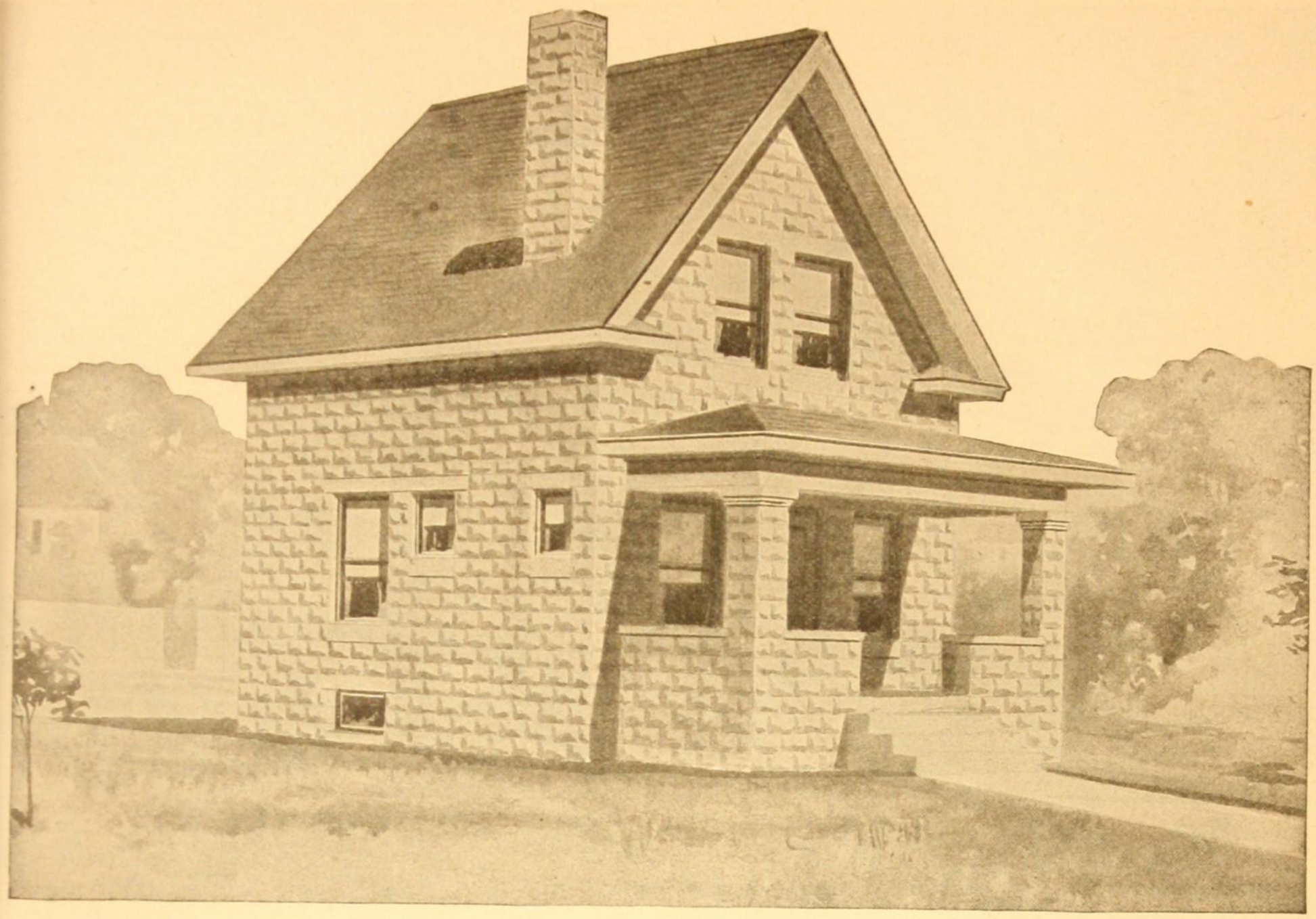
of Blue Prints, together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

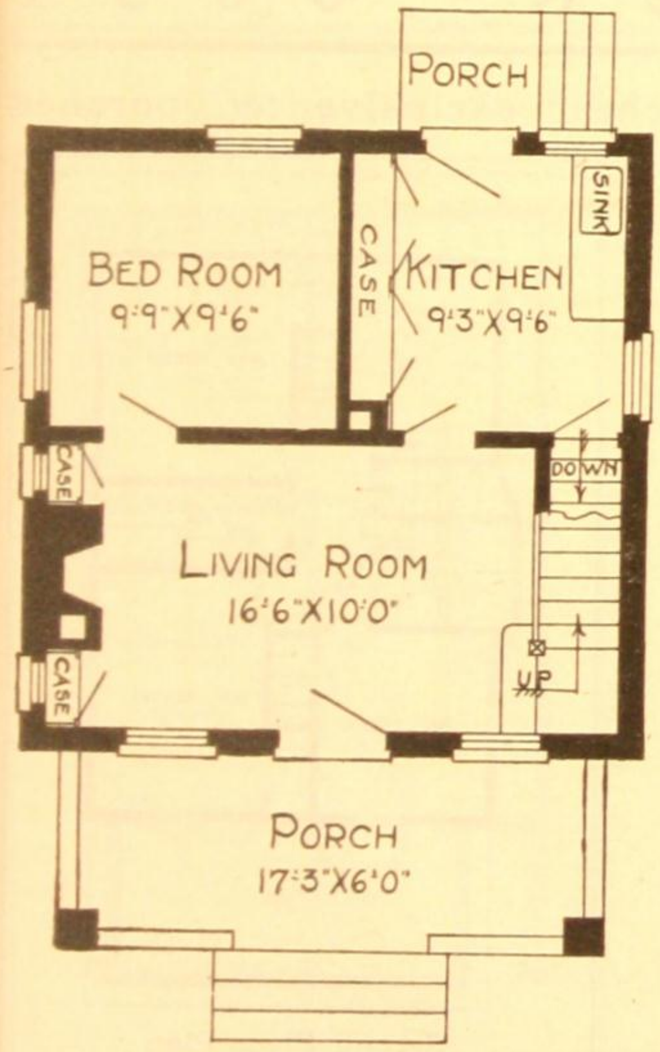


Second Floor Plan



Design No. 8214

Size: Width, 21 feet 4 inches; Length, 21 feet 4 inches



First Floor Plan

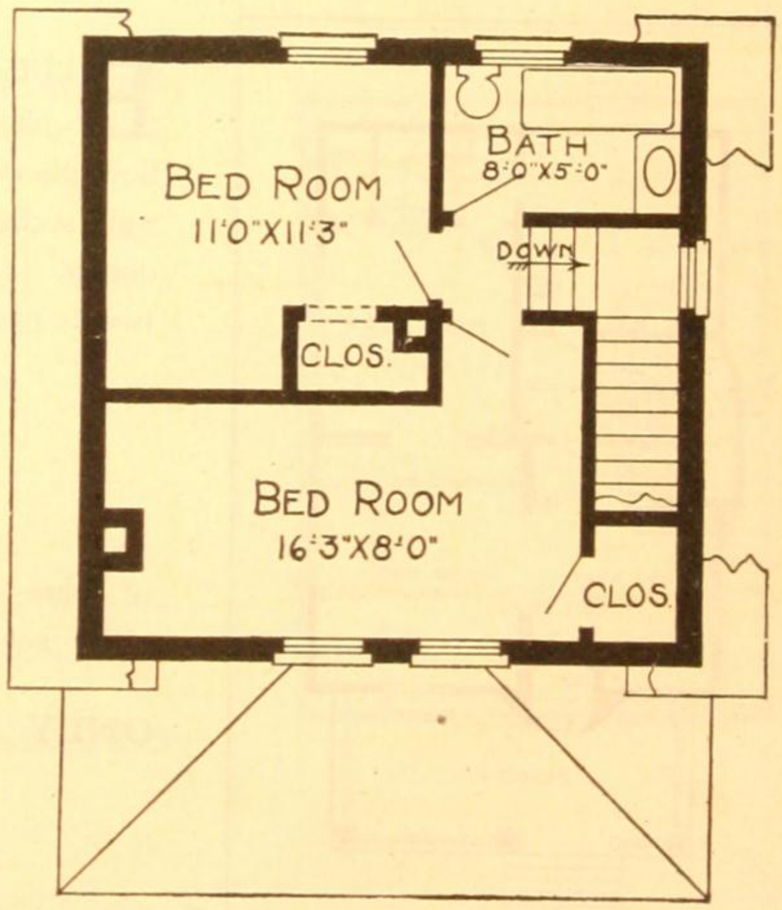
Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twelve pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

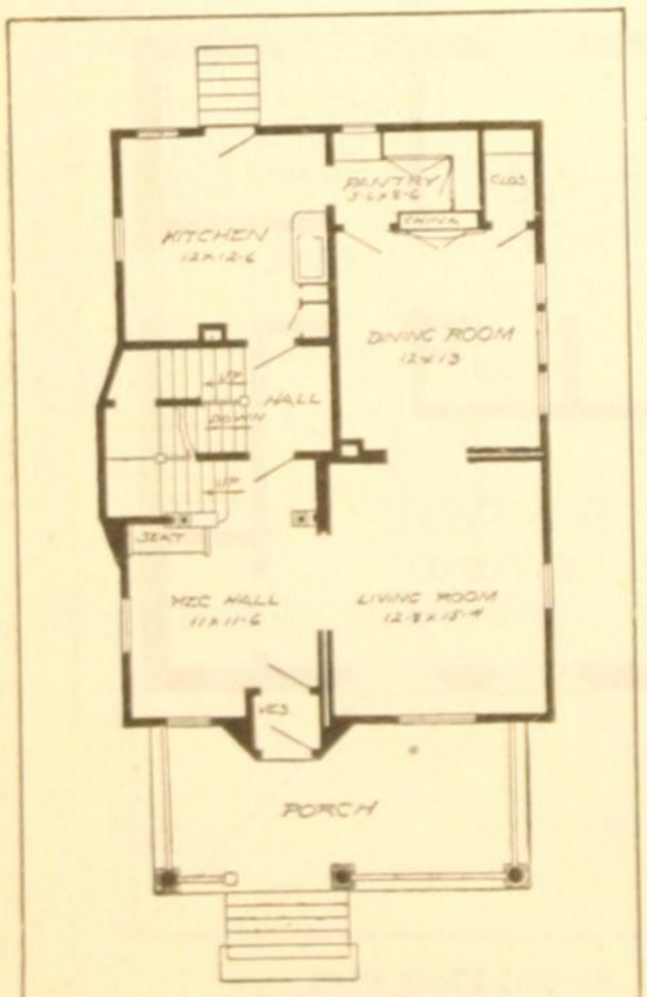
We mail Plans and Specifications the same day order is received.



Second Floor Plan

DESIGN NUMBER 6031

Size: width, 25 feet, 6 inches; length, 36 feet, 6 inches, exclusive of porches



First Floor Plan

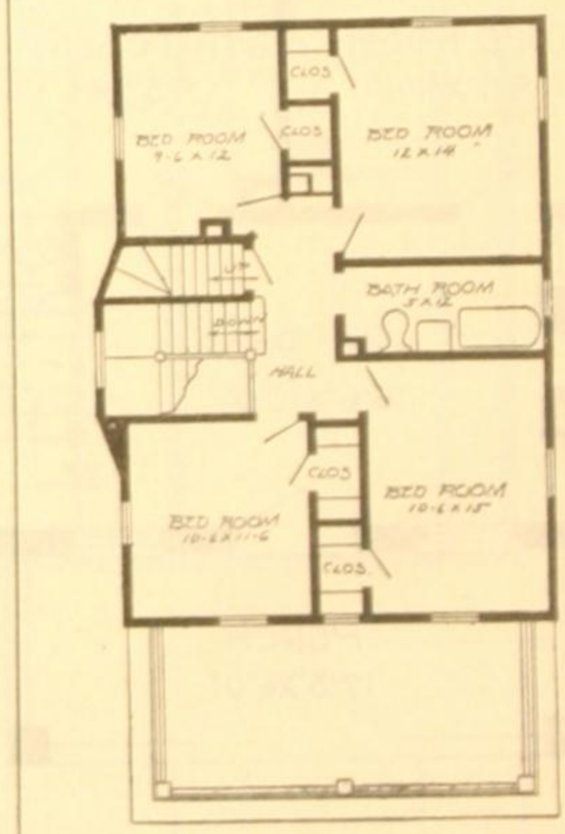
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

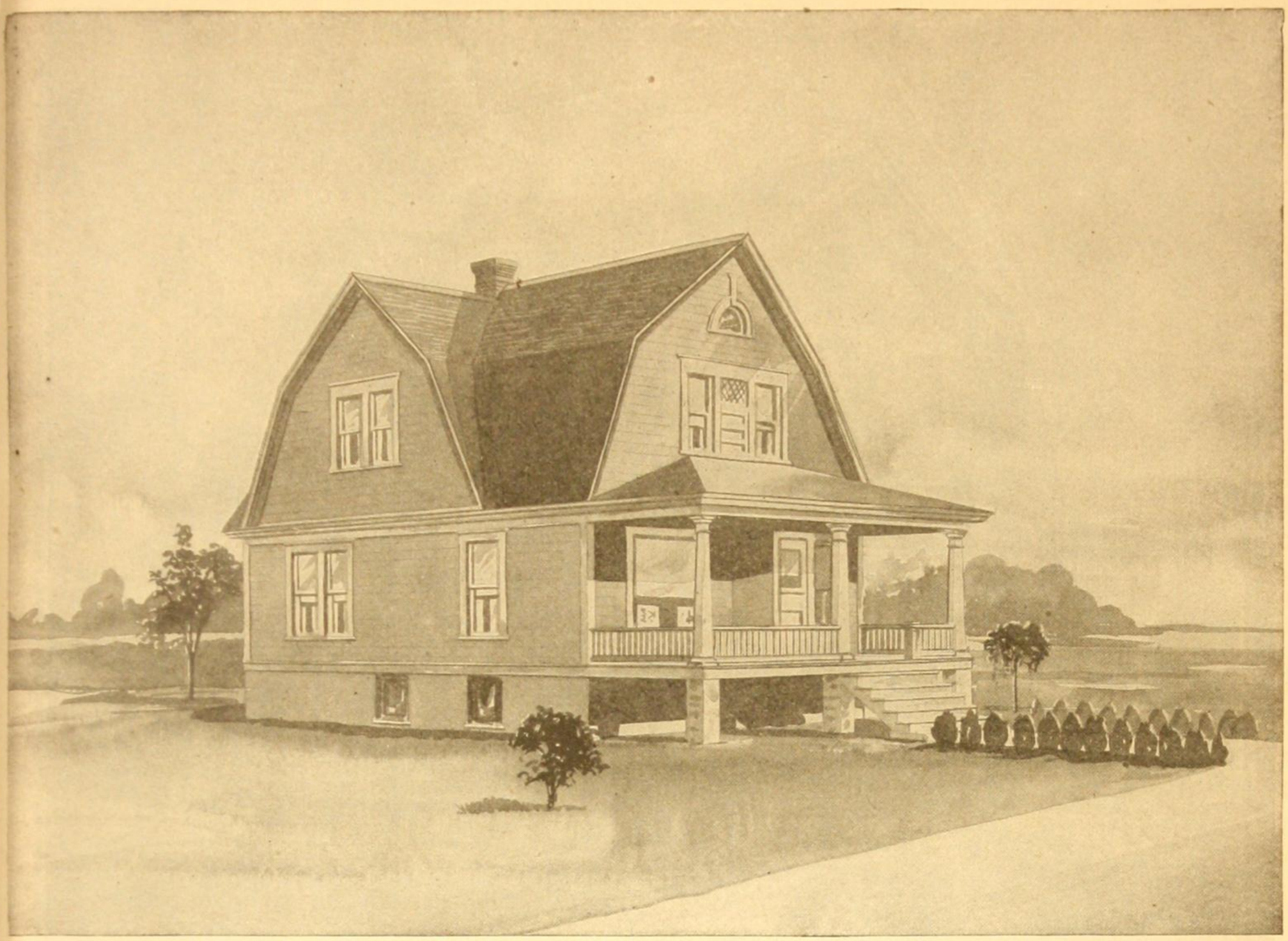
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.

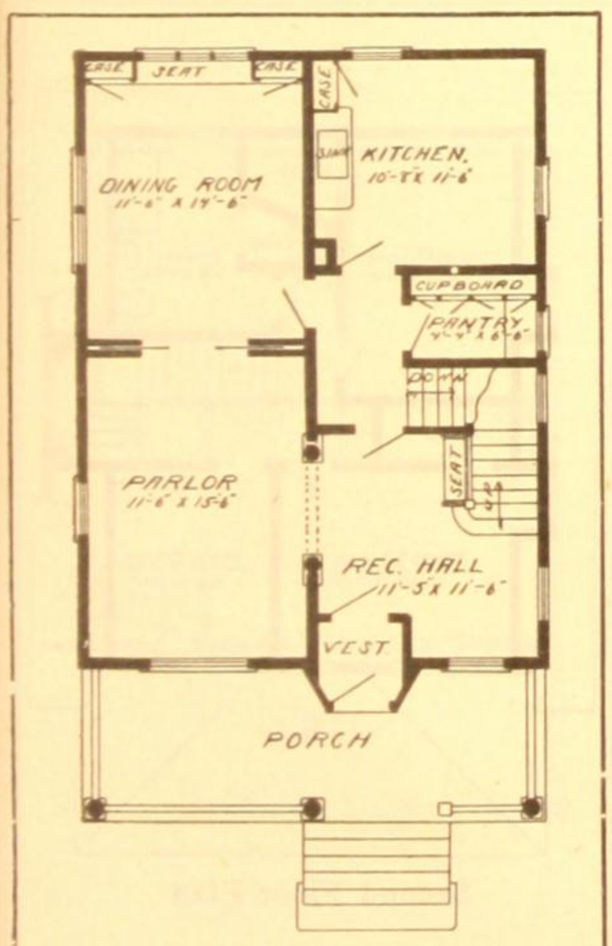


Second Floor Plan



DESIGN NUMBER 6088

Size: width, 24 feet, 6 inches; length, 32 feet, exclusive of porches



First Floor Plan

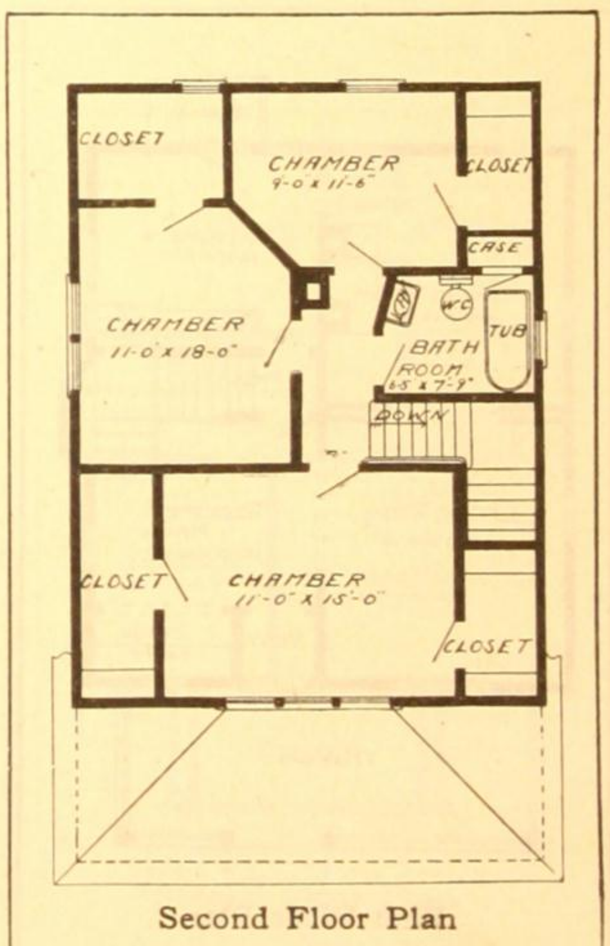
BLUE PRINTS consist of basement plan; first and second floor plans; front, rear two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

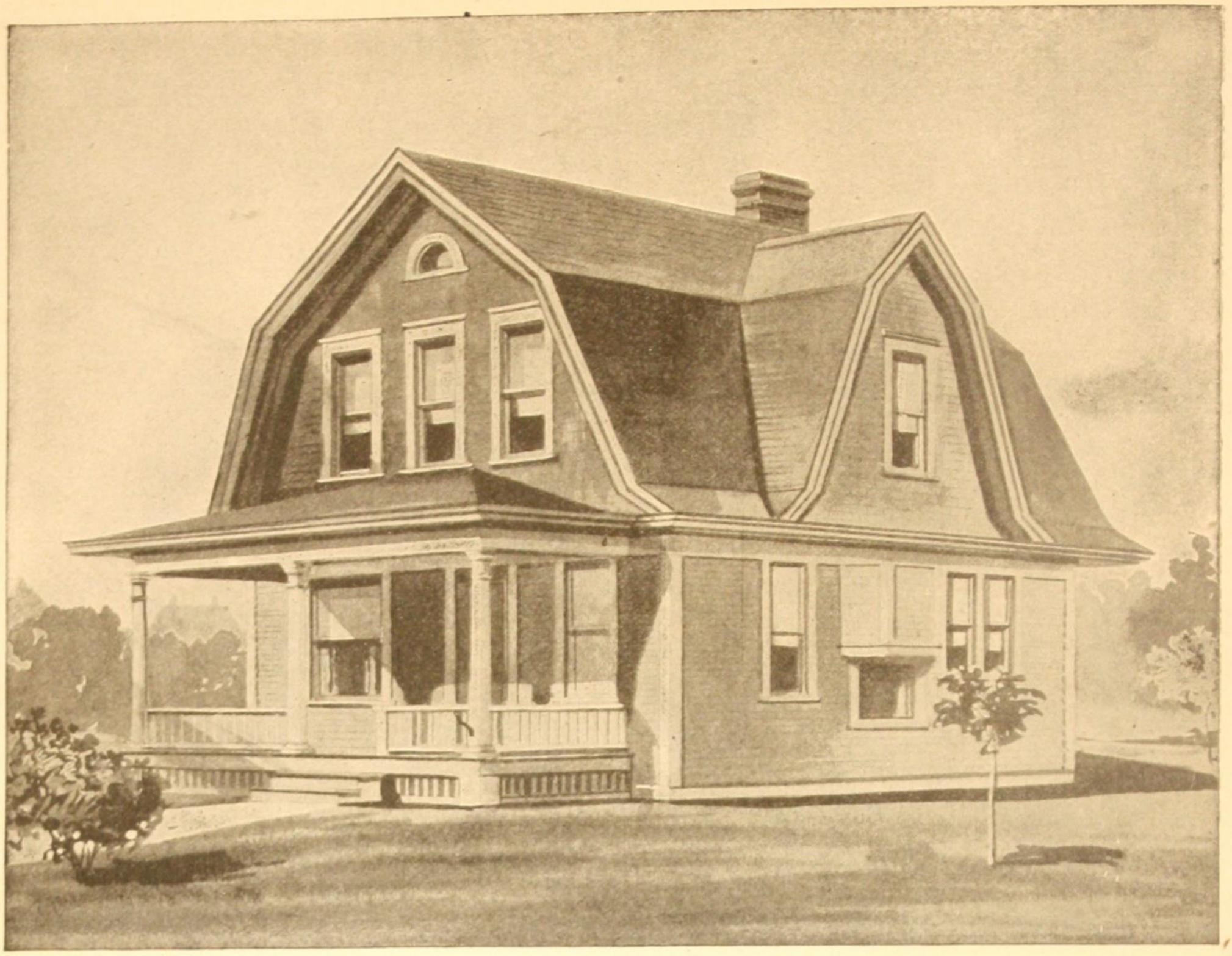
of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.

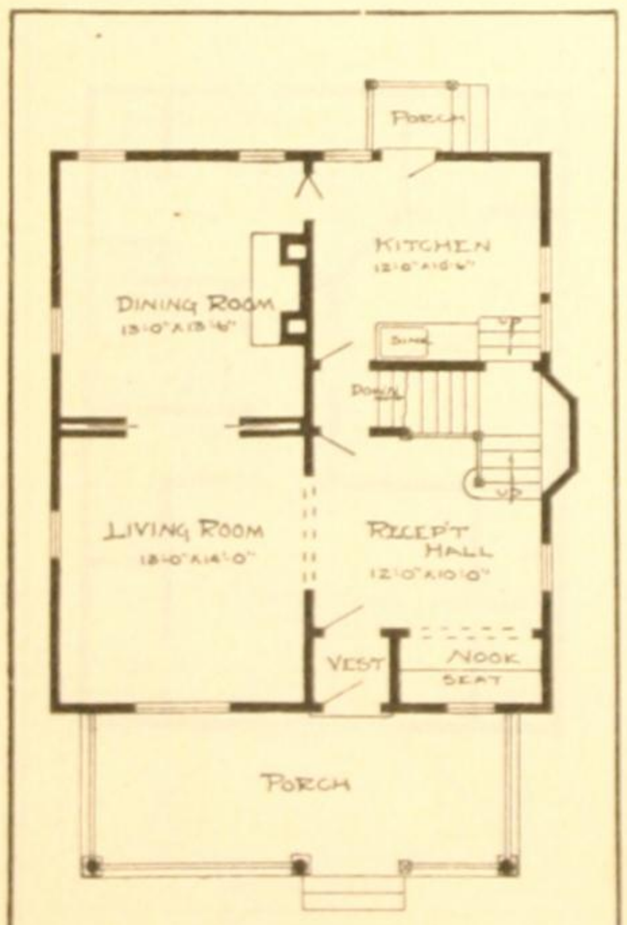


Second Floor Plan



DESIGN NUMBER 6035

Size: width, 26 feet 6 inches; length, 29 feet 6 inches, exclusive of porches



First Floor Plan

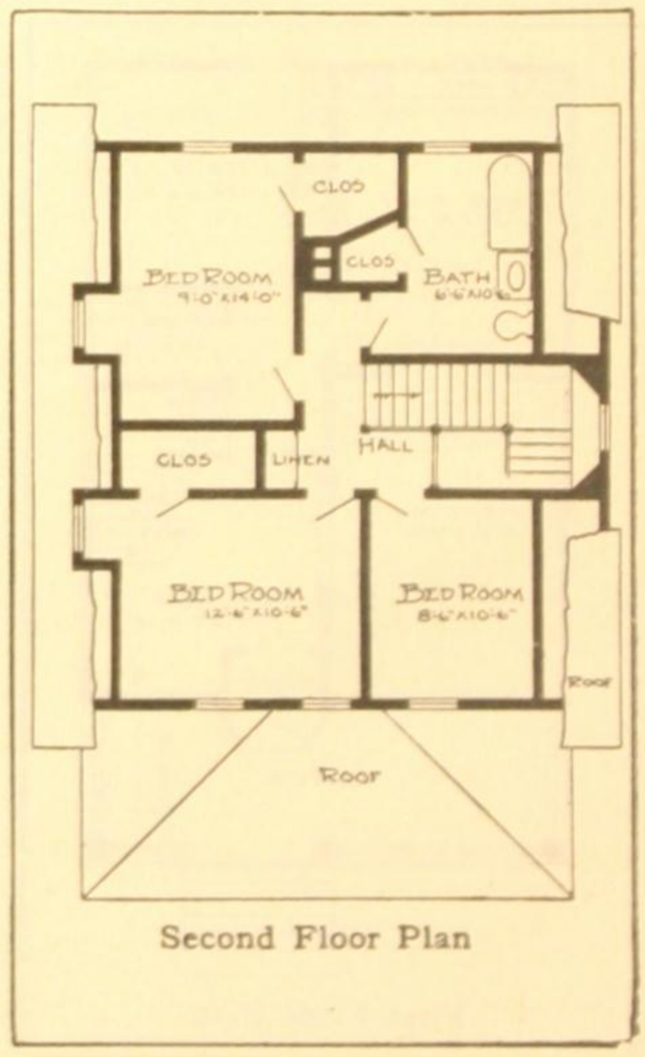
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear and two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

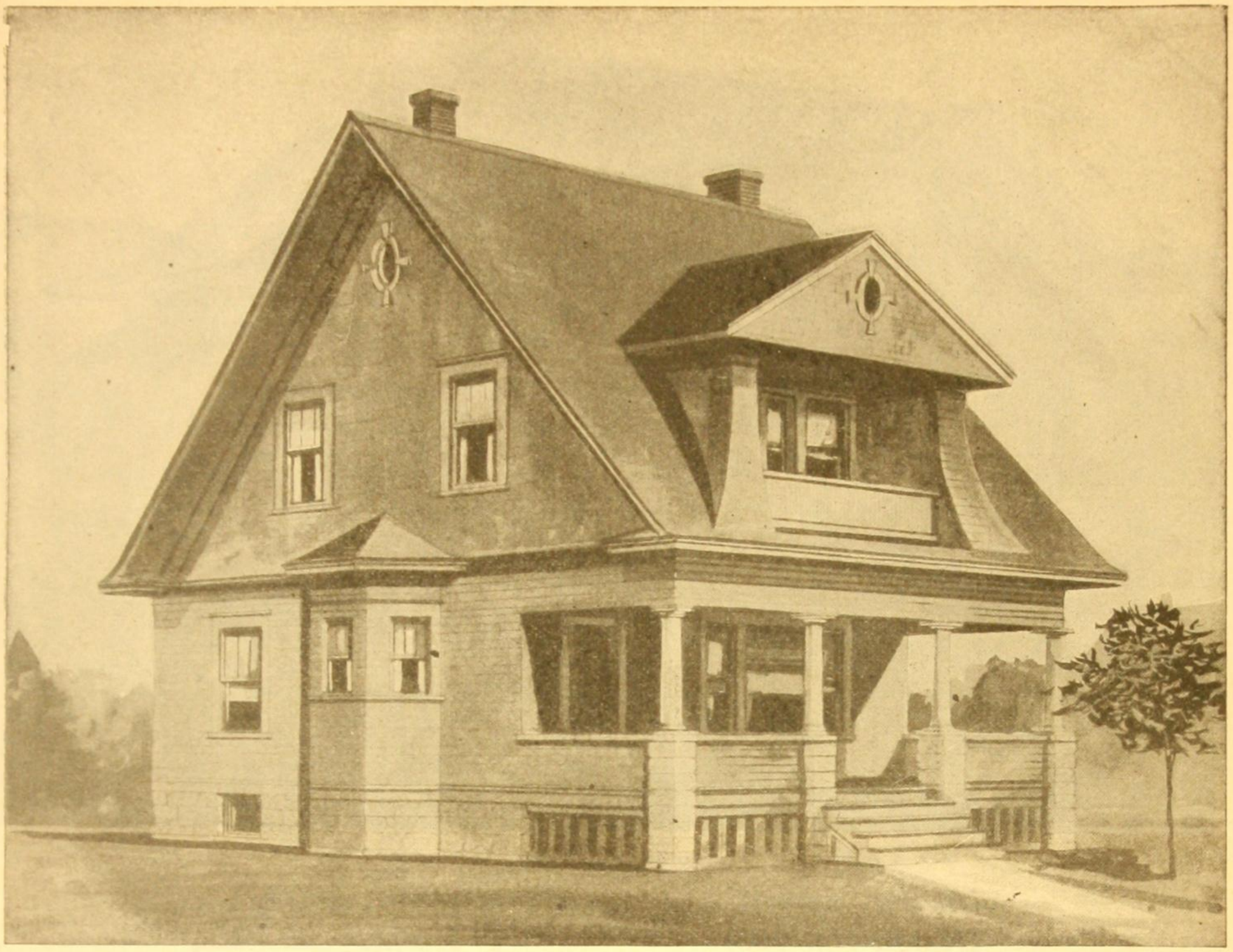
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.

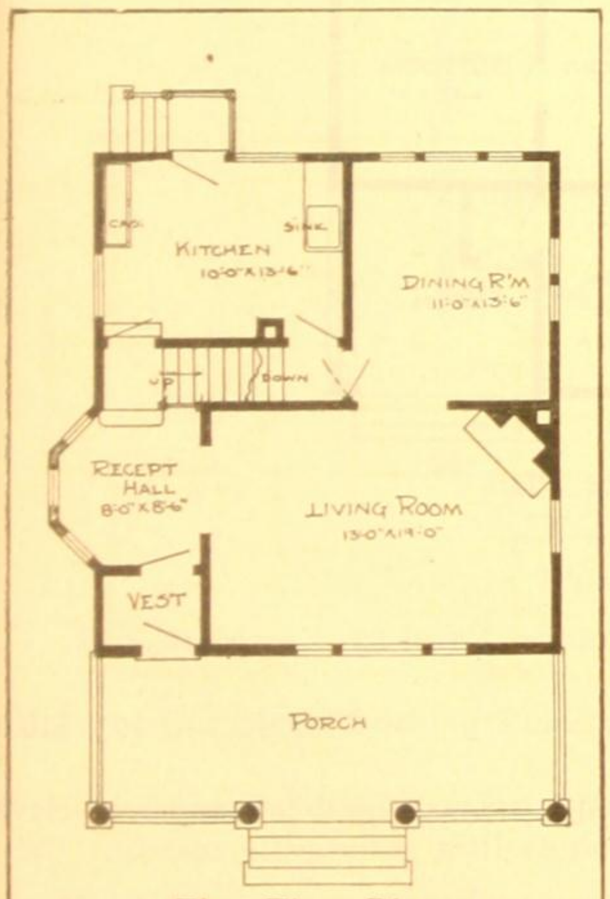


Second Floor Plan



DESIGN NUMBER 6069

Size: width, 28 feet 6 inches; length, 28 feet, exclusive of porches



First Floor Plan

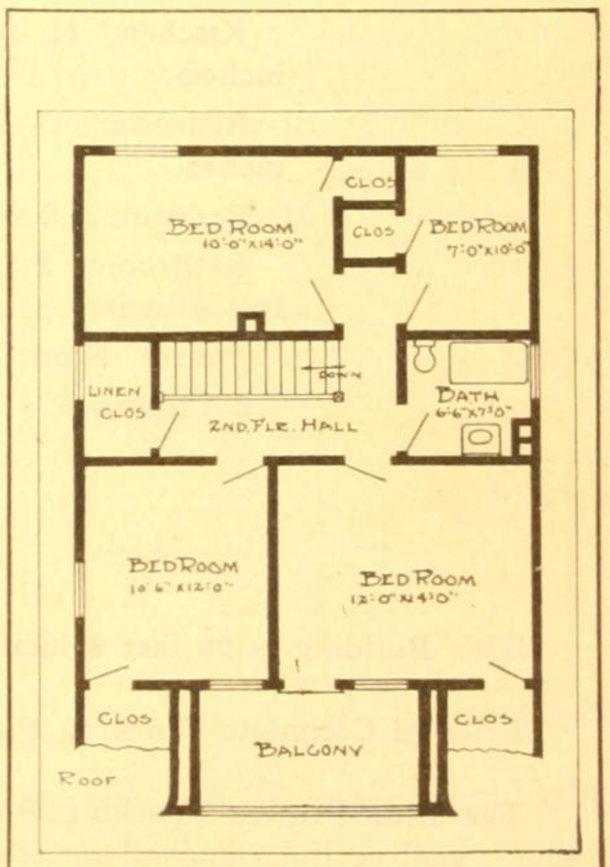
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, and two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

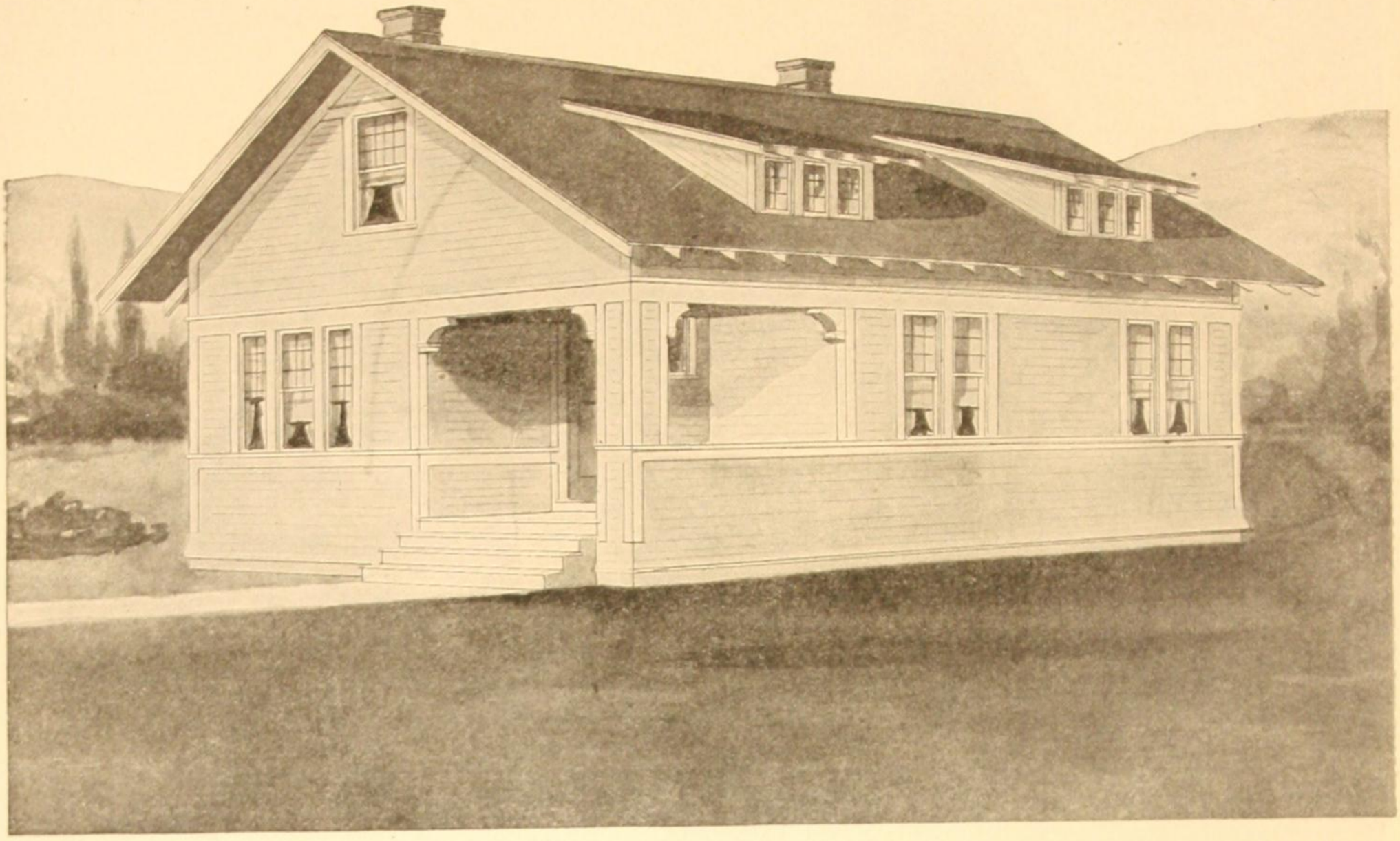
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.



Second Floor Plan



Design No. 9031

The arrangement of this House is as follows:

Living Room, 16 feet by 12 feet.

Hall, 5 feet 6 inches by 7 feet.

Dining Room, 16 feet by 12 feet.

Kitchen, 11 feet by 10 feet 6 inches.

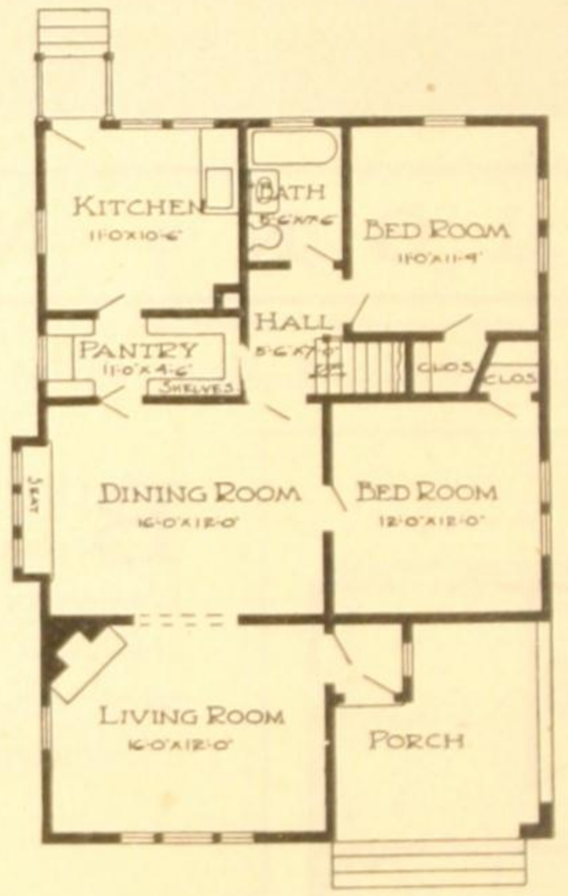
Bedroom, 11 feet by 11 feet 9 inches.

Bedroom, 12 feet by 12 feet.

Bathroom, 5 feet 6 inches by 7 feet 6 inches.

Pantry, Front and Rear Porches.

2 Closets.



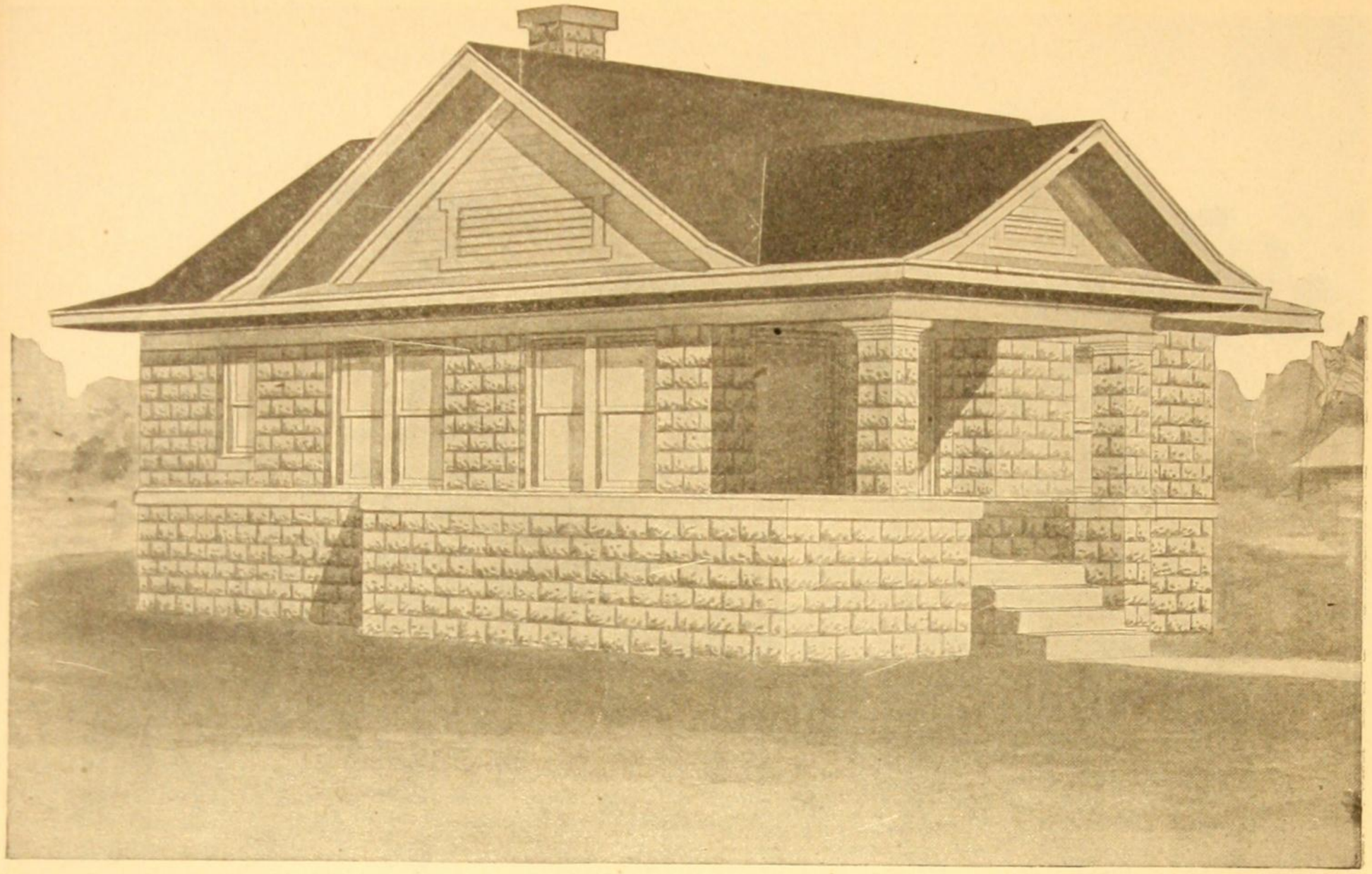
Floor Plan.

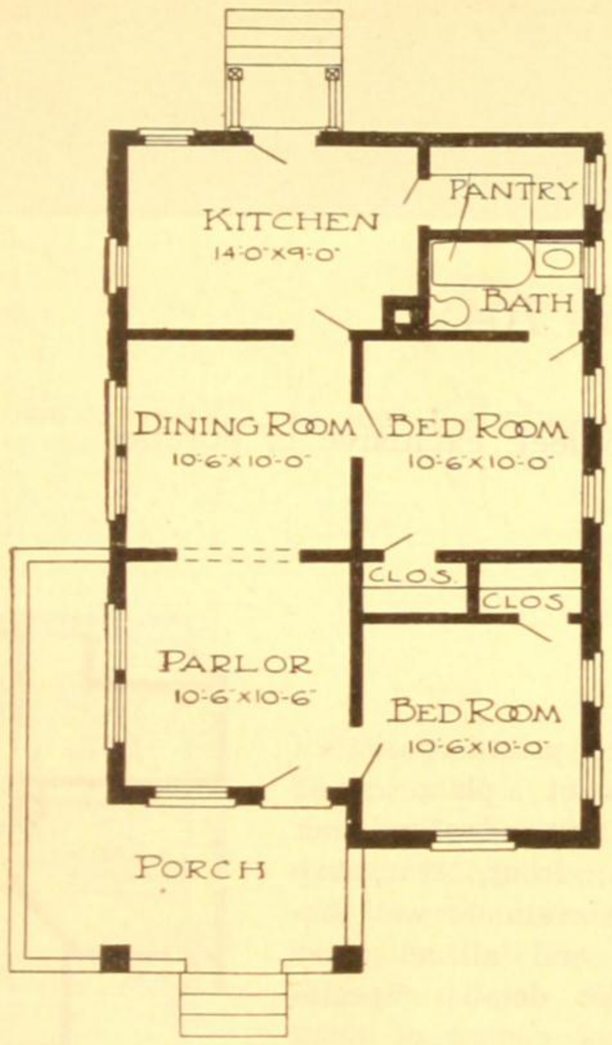
This Building is 29 feet 6 inches in width; 41 feet 6 inches in length.

Price of Complete Working Plans and Specifications..... $10.00

The Blue Printed Working Plans for this House consist of roof plan floor plan; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.





Floor Plan.

Design No. 9077

The arrangement of this House is as follows:

FLOOR PLAN.

Parlor, 10 feet 6 inches by 10 feet 6 inches.

Dining Room, 10 feet 6 inches by 10 feet.

Kitchen, 14 feet by 9 feet.

Bedroom, 10 feet 6 inches by 10 feet.

Bedroom, 10 feet 6 inches by 10 feet.

Bathroom, 7 feet 6 inches by 4 feet 6 inches.

Pantry, Front and Rear Porches.

2 Closets.

This Building is 23 feet 4 inches in width; 34 feet in length.

Price of Complete Working Plans and Specifications $12.00

The Blue Printed Working Plans for this House consist of foundation plan; roof plan and floor plan; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.

Design No. 7045

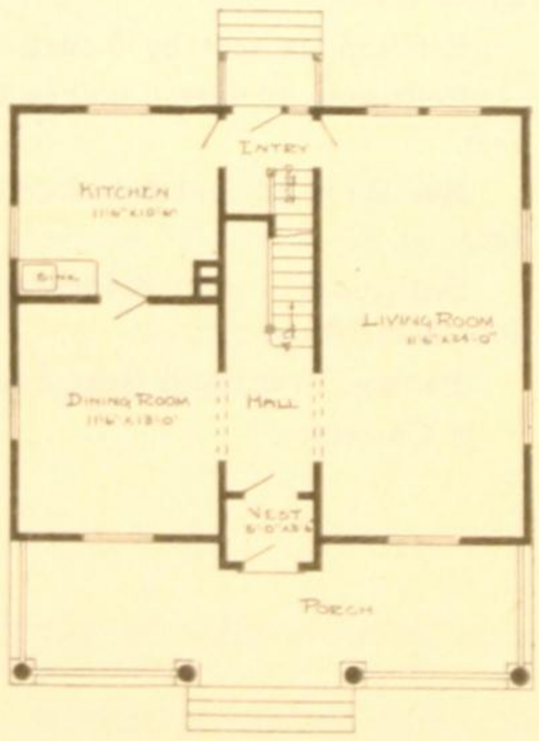
Size: Width, 30 feet; Length, 25 feet, exclusive of porches

PRICE

of Blue Prints, together with a complete set of typewritten specifications

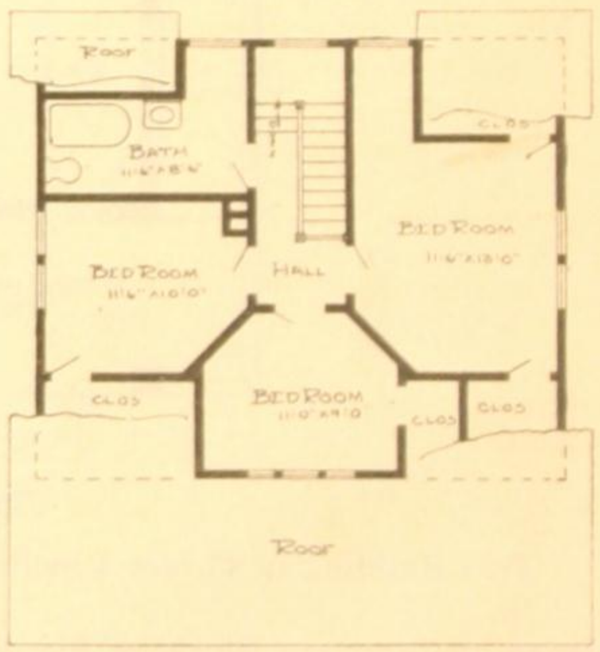
ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

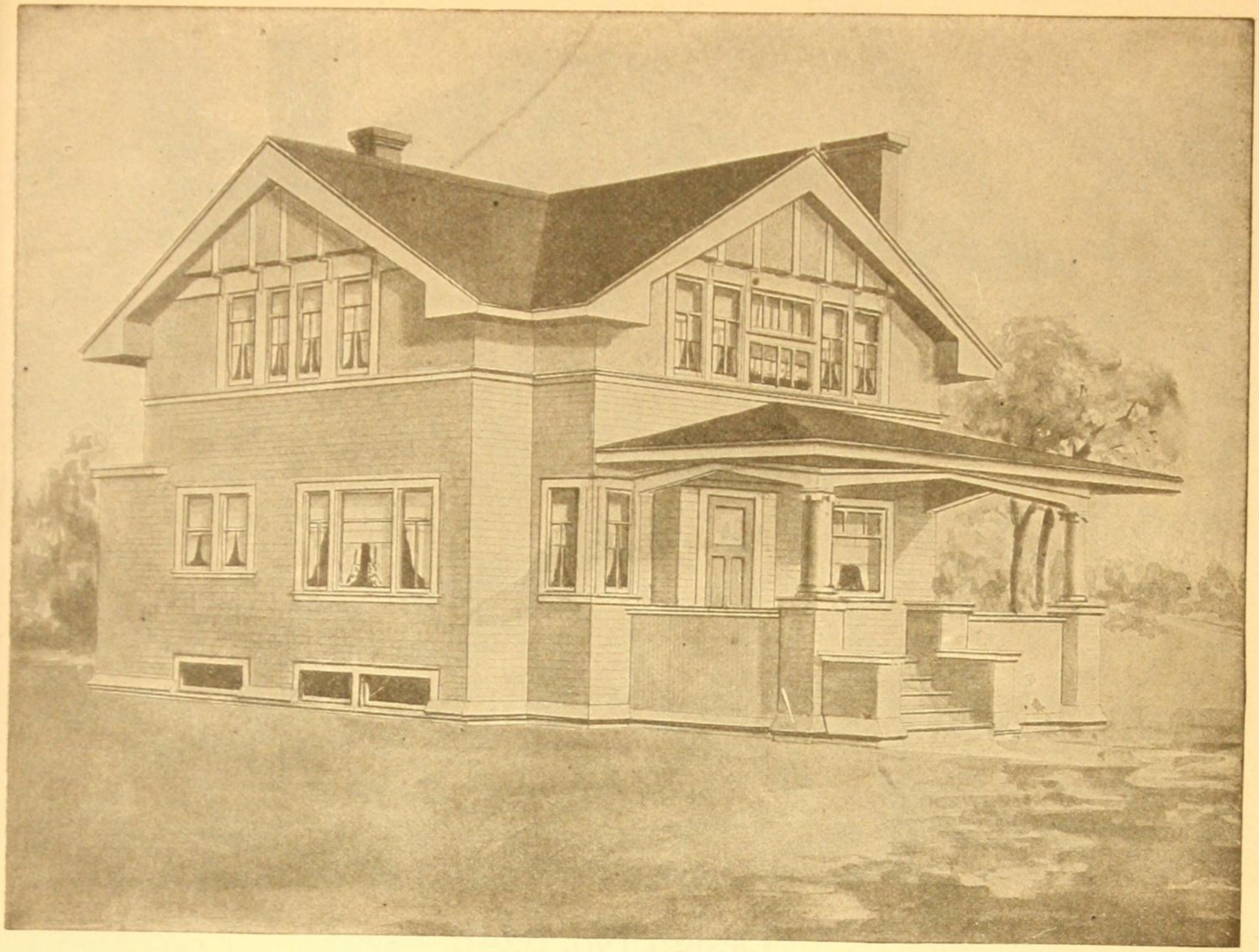


First Floor Plan

Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

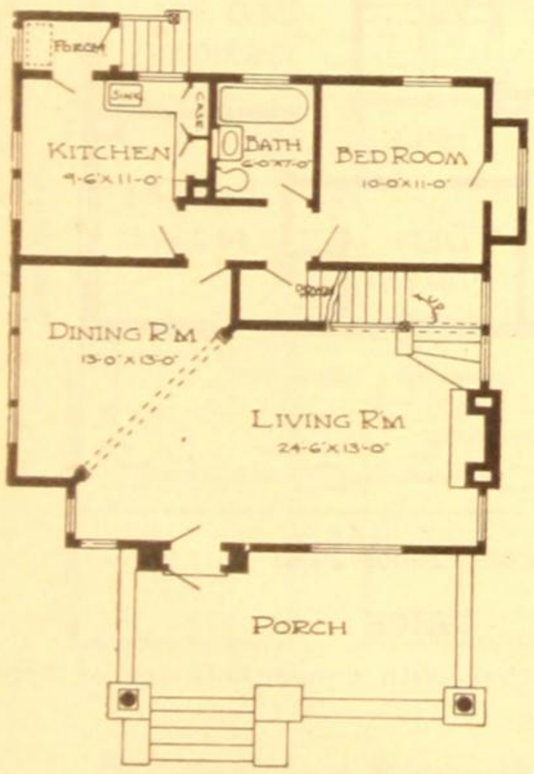


Second Floor Plan



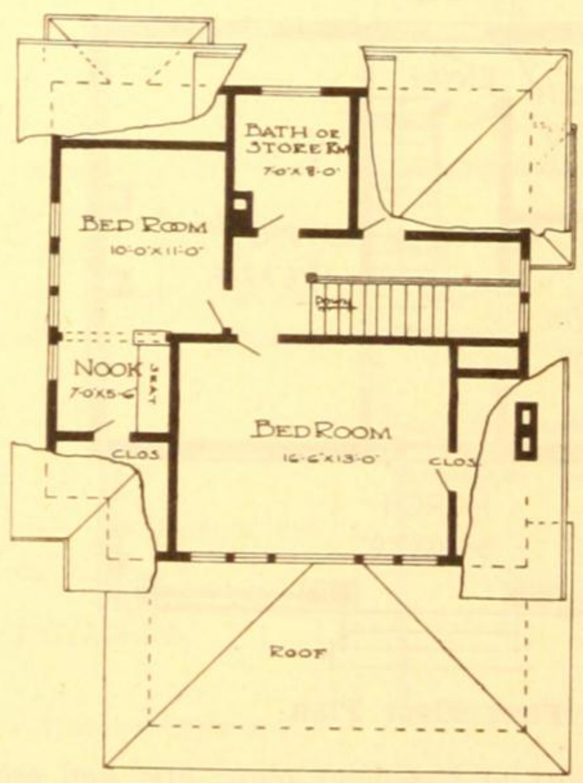
Design No. 7008

Size: Width, 31 feet 6 inches; Length, 29 feet, exclusive of porches



First Floor Plan

Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



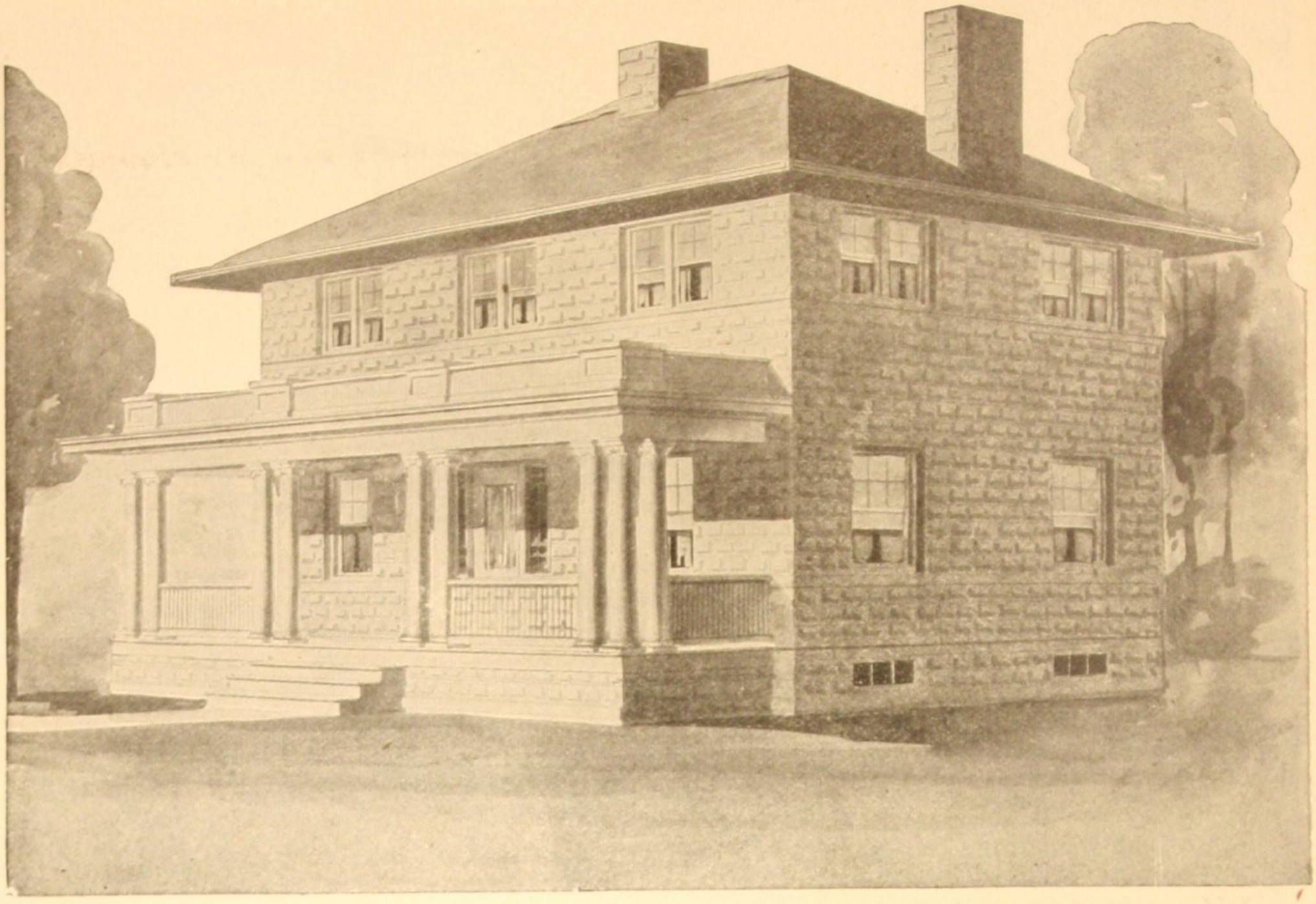
Second Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

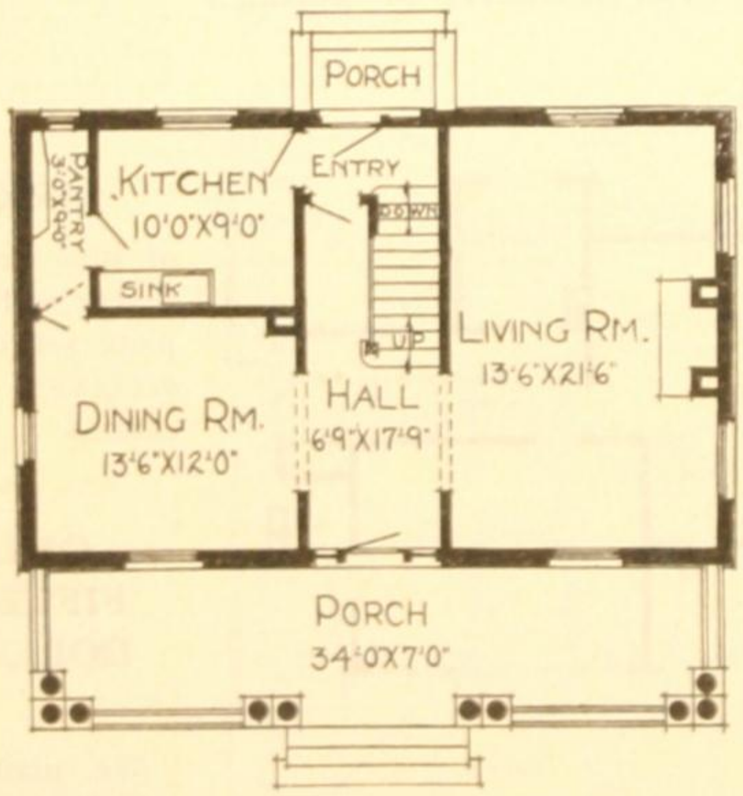
ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

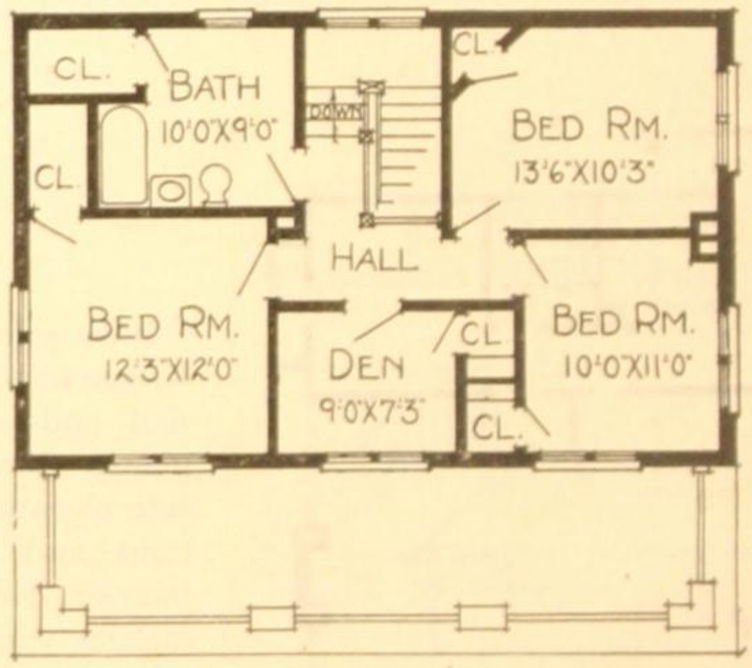


Design No. 8248

Size: Width, 36 feet; Length, 23 feet 4 inches



First Floor Plan



Second Floor Plan

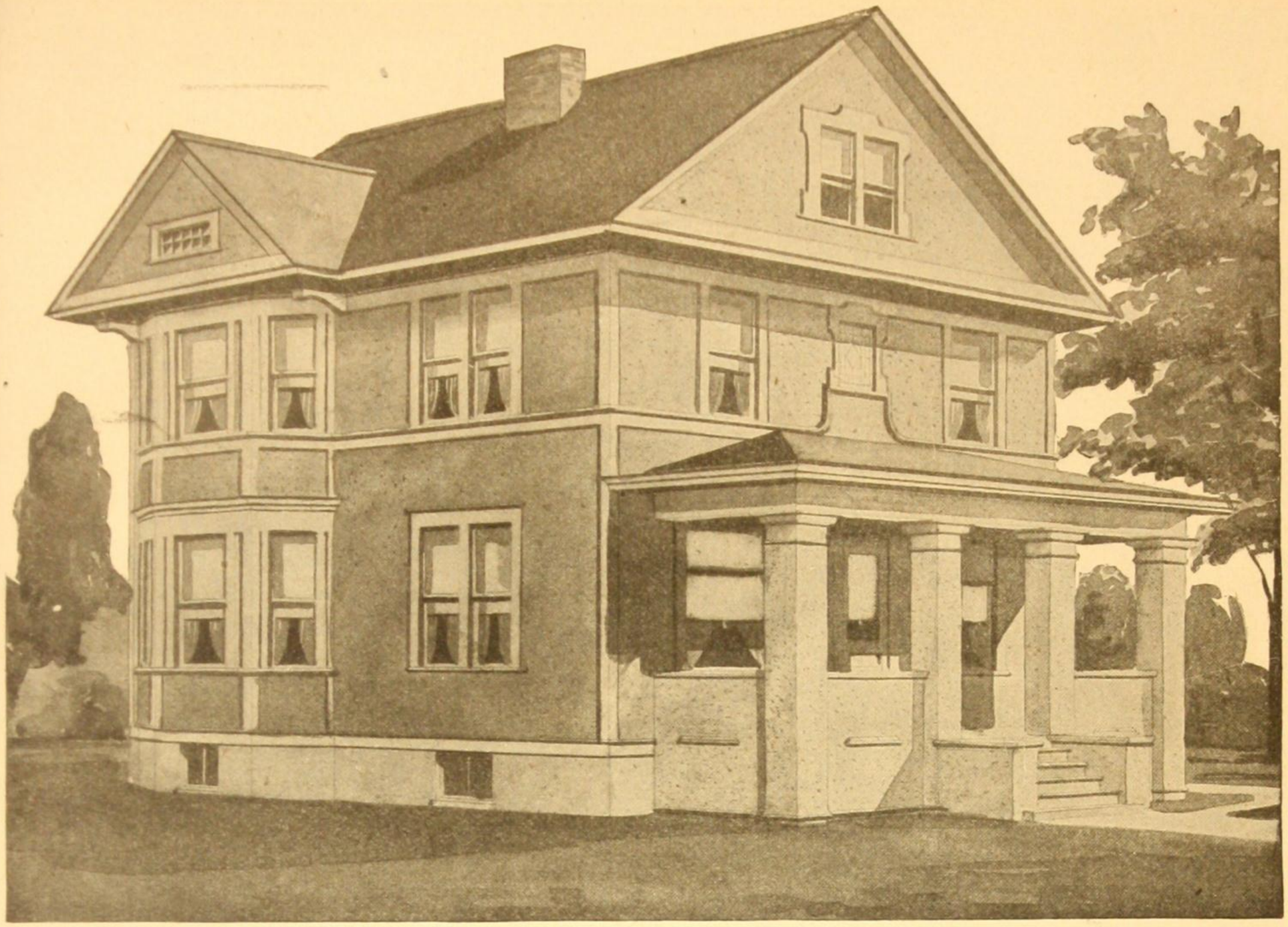
Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

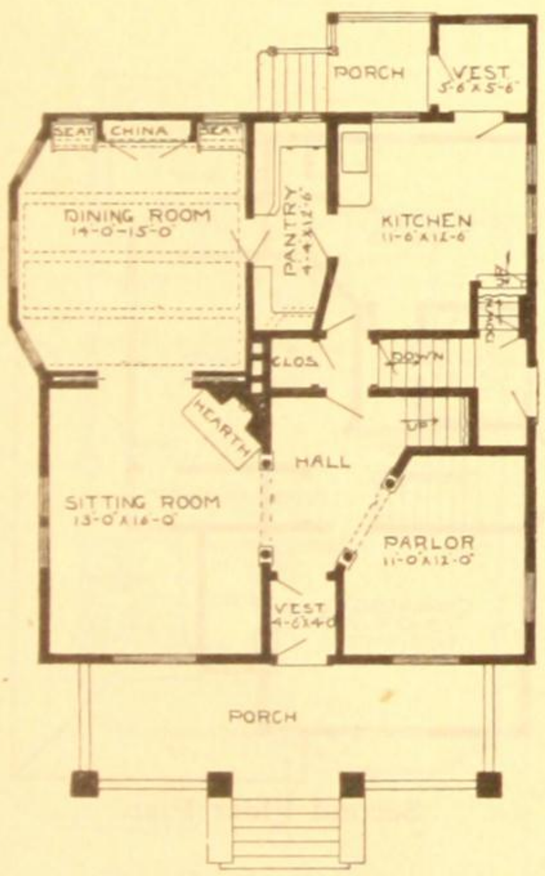
ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.



Design No. 8141

Size: Width, 31 feet 6 inches; Length, 33 feet



First Floor Plan

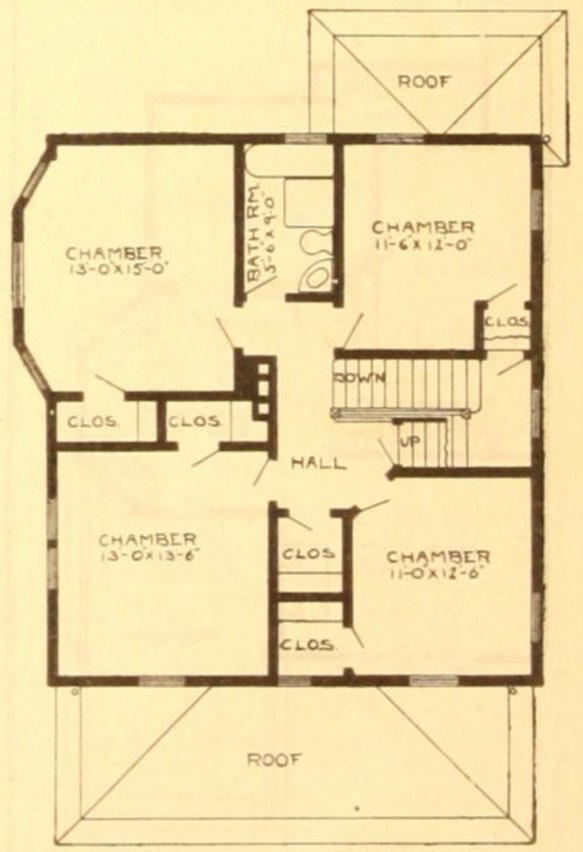
Blue prints consist of basement plans; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

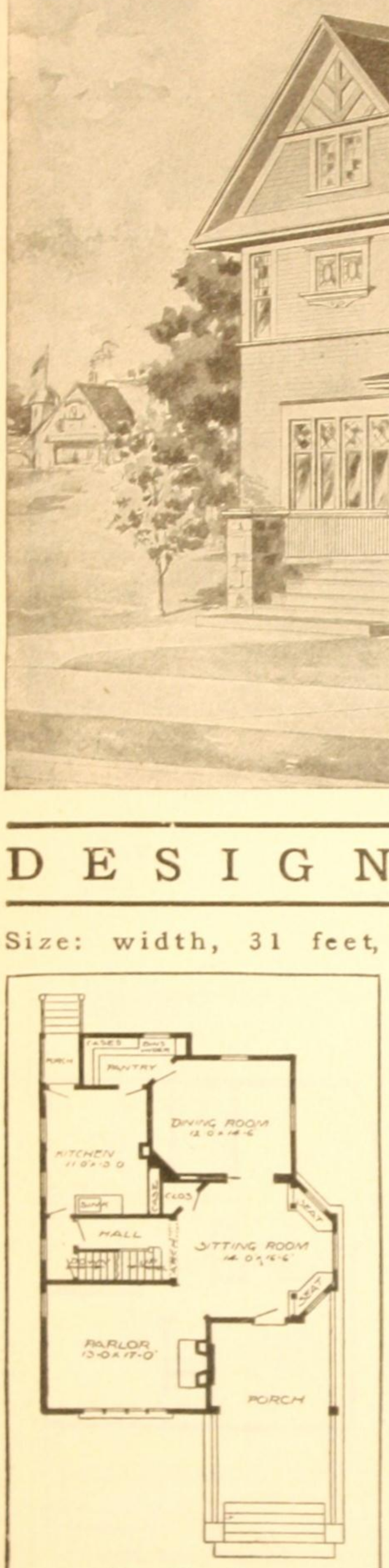
We mail Plans and Specifications the same day order is received.



Second Floor Plan

DESIGN NUMBER 6012

Size: width, 31 feet, 6 inches; length, 40 feet, exclusive of porches



First Floor Plan

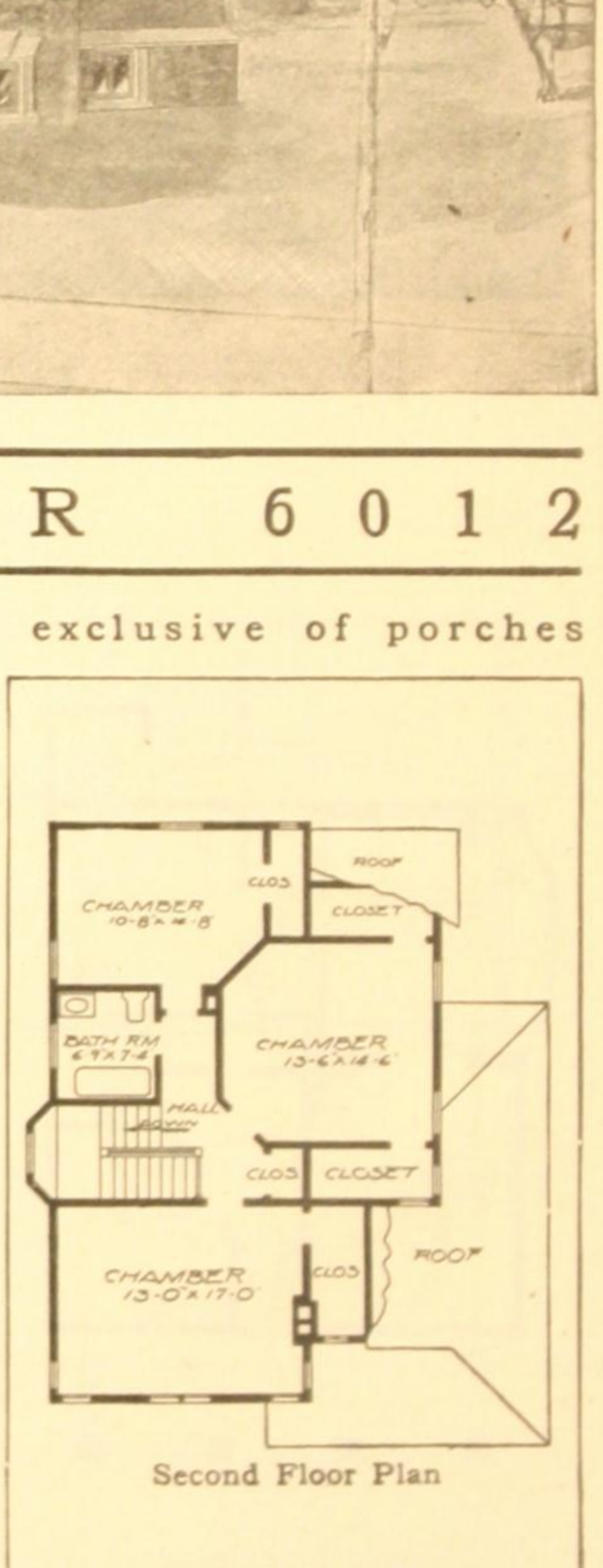
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

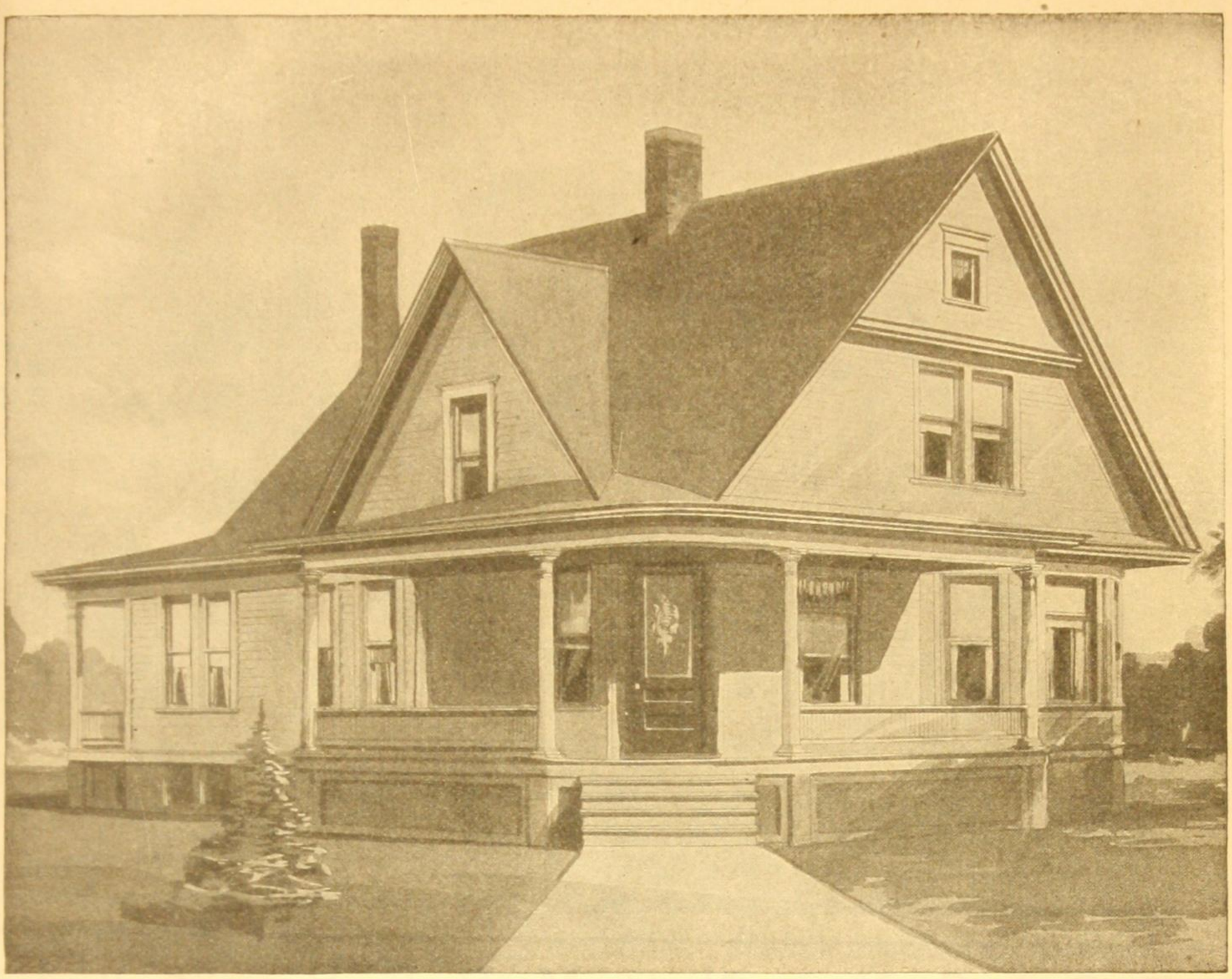
of Blue Prints, together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

We mail plans and specifications the same day order is received.

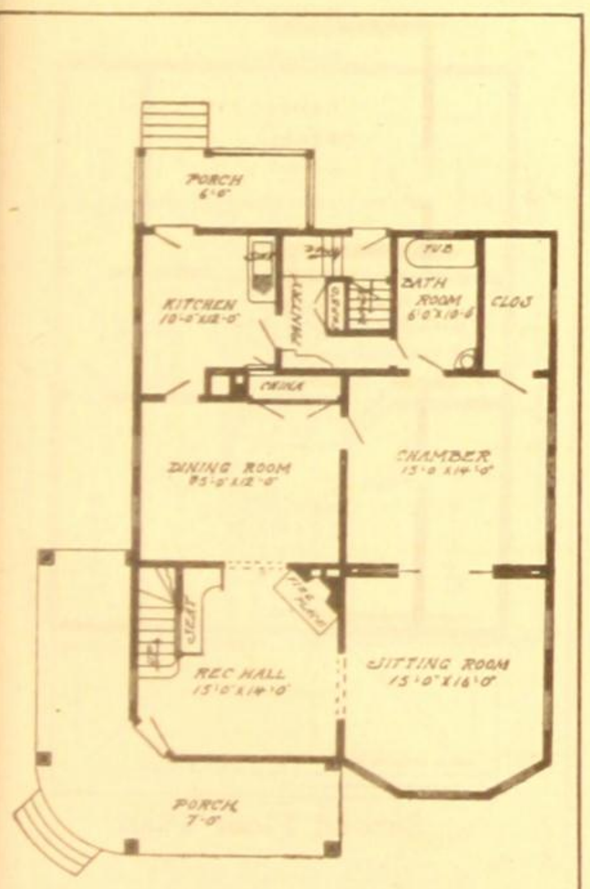


Second Floor Plan



DESIGN NUMBER 6064

Size: width, 31 feet 6 inches; length, 42 feet 6 inches exclusive of porches



First Floor Plan

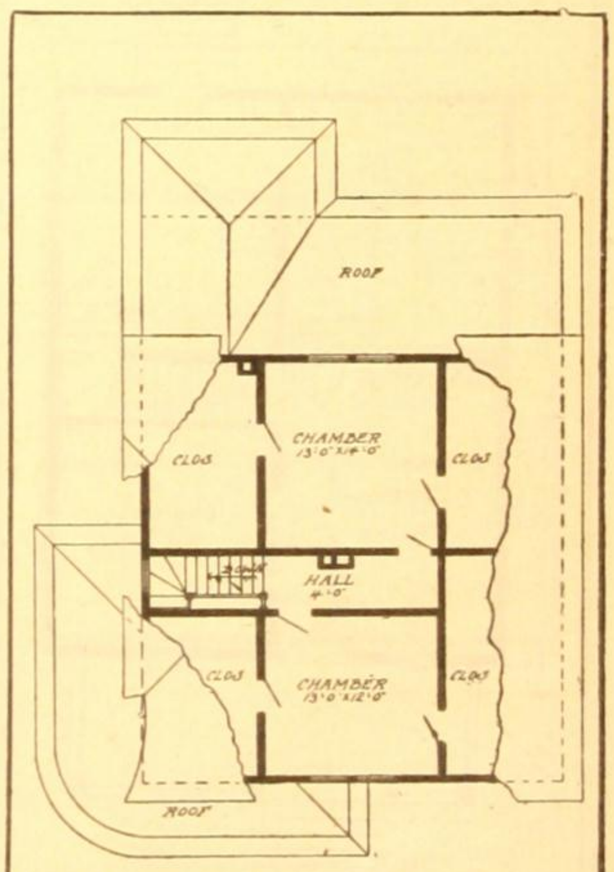
BLUE PRINTS consist of basement plan; first and second floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

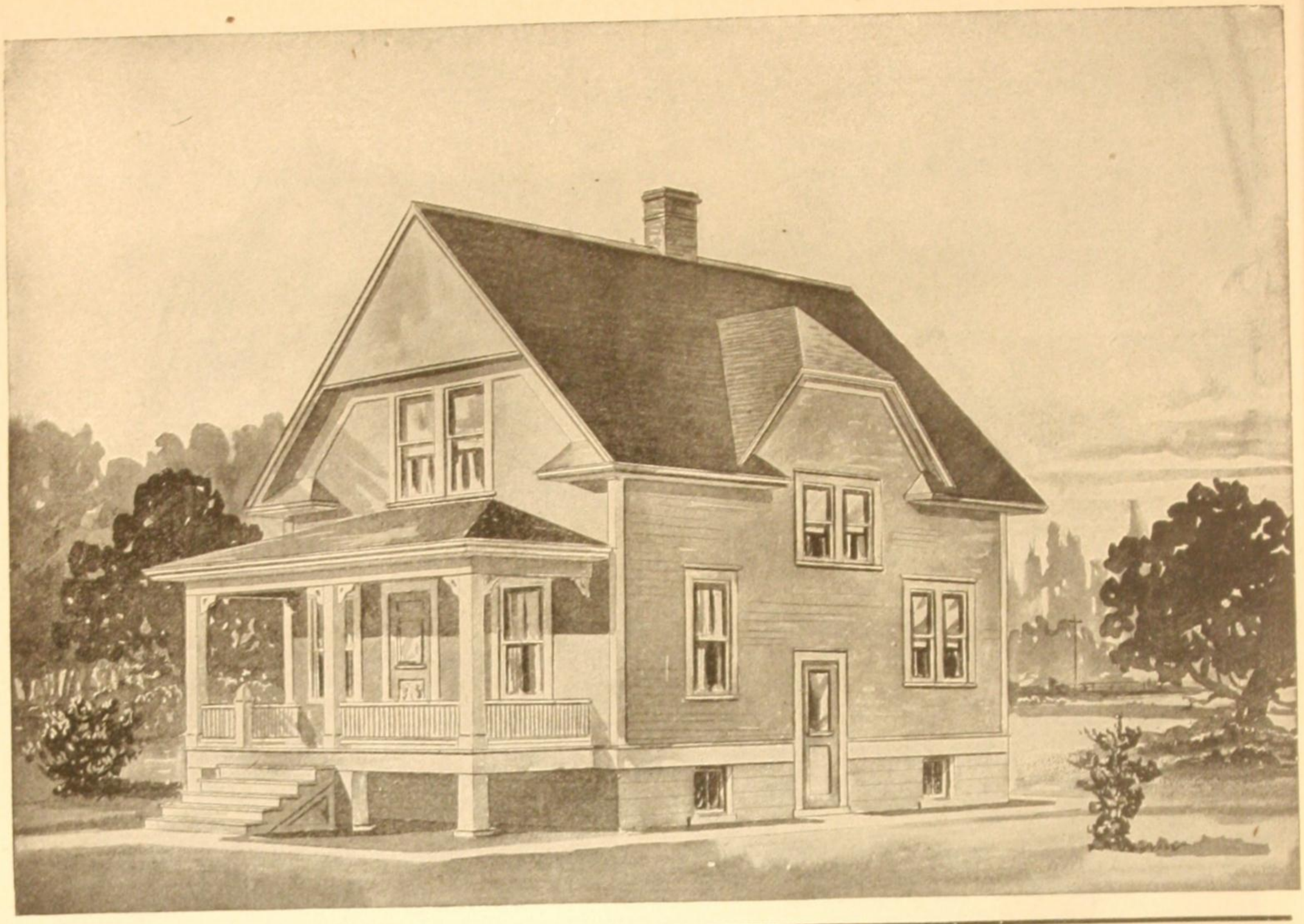
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.

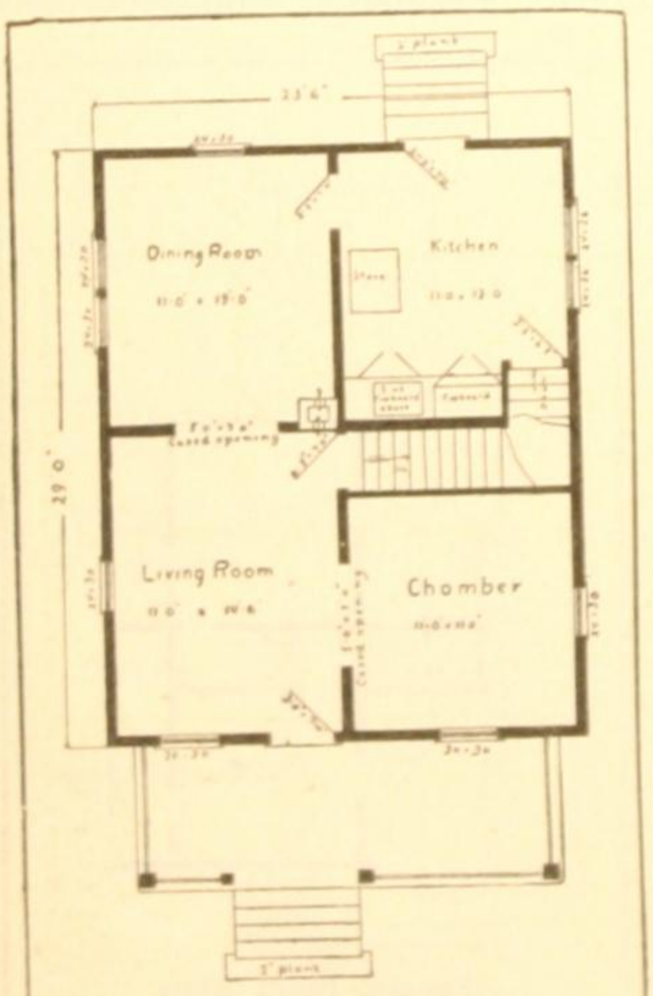


Second Floor Plan



DESIGN NUMBER 6033

Size: width, 23 feet 6 inches; length, 29 feet, exclusive of porches



First Floor Plan

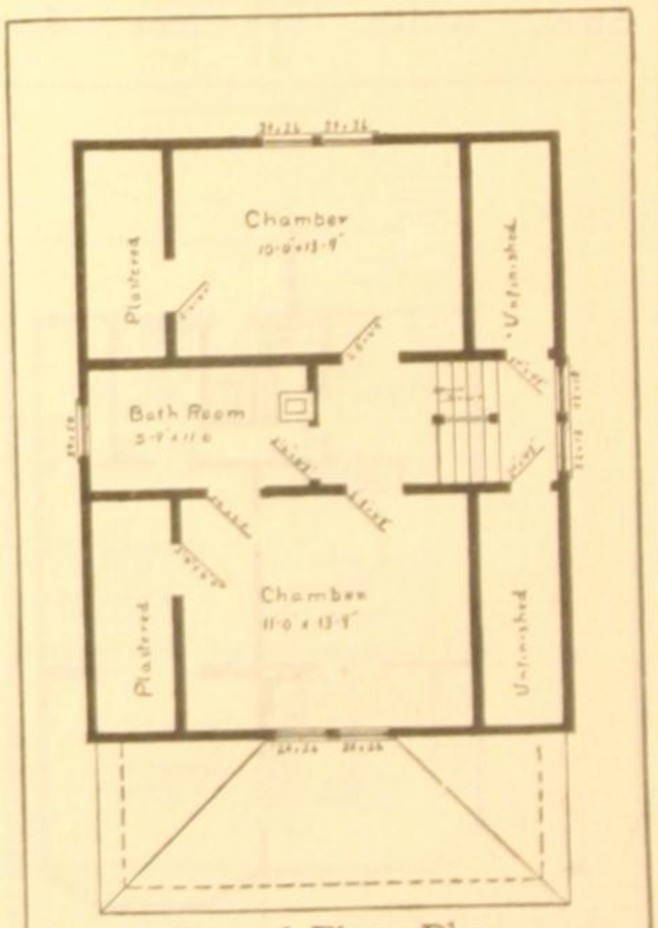
BLUE PRINTS consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

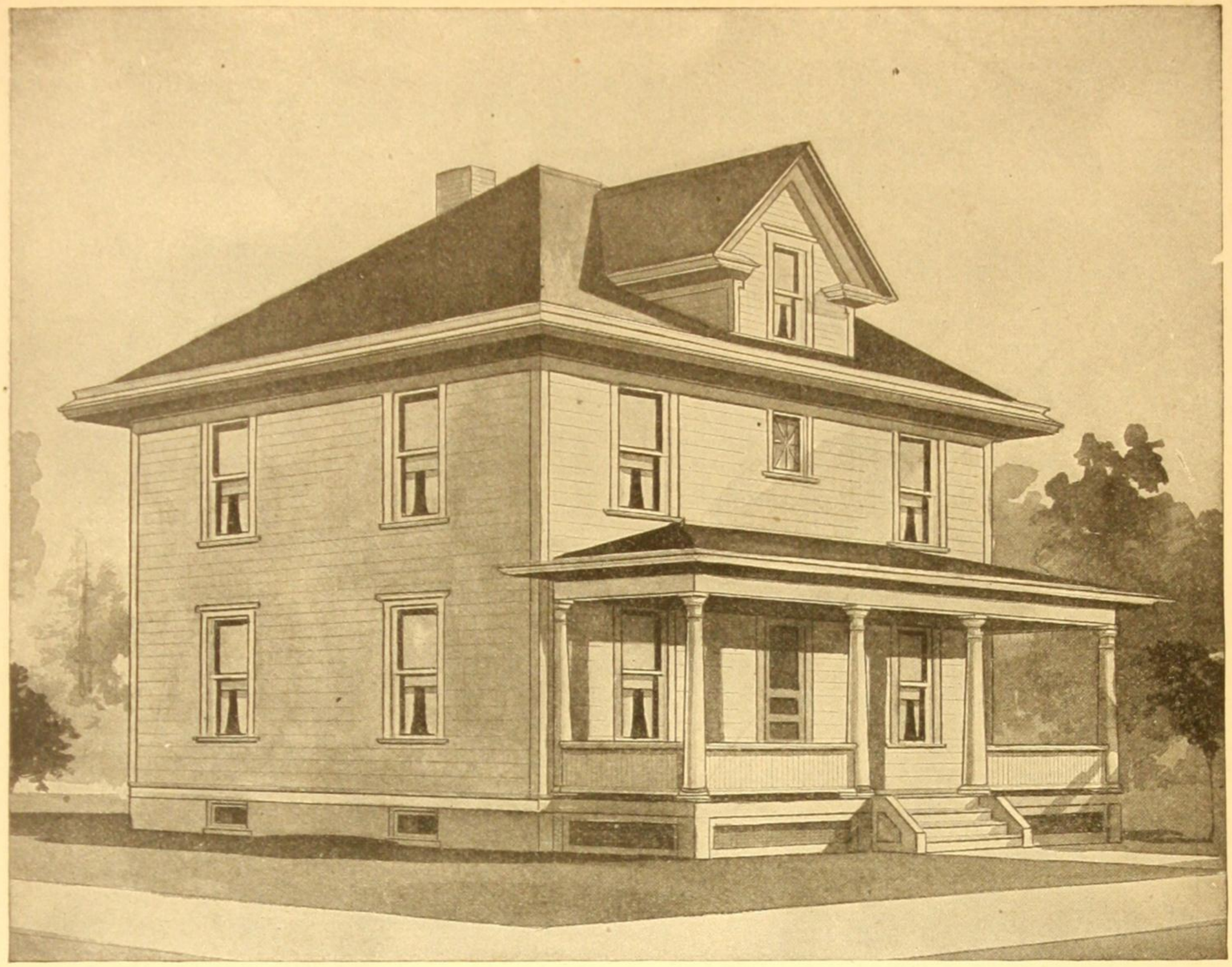
of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.

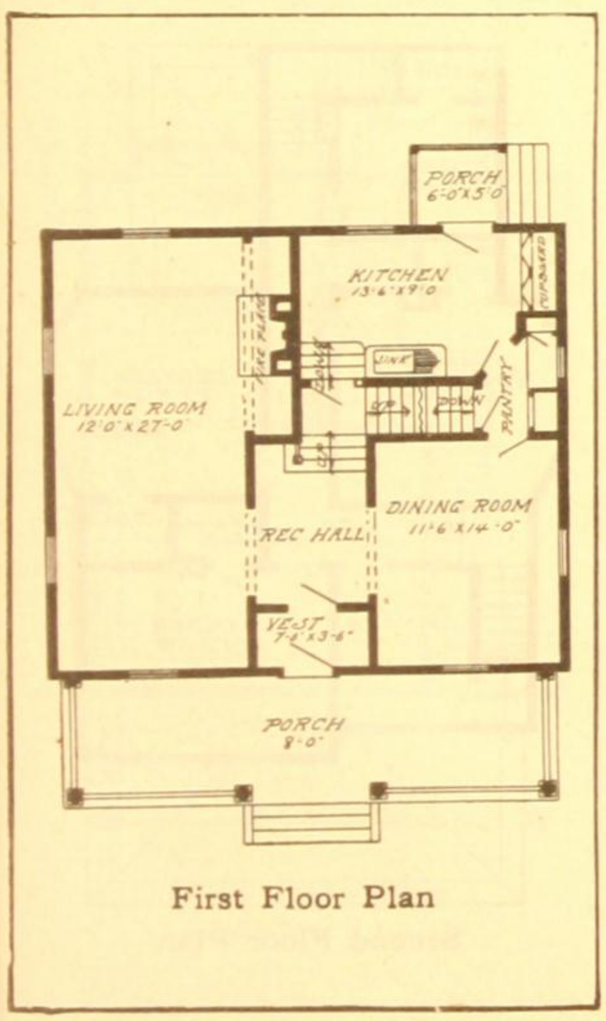


Second Floor Plan



DESIGN NUMBER 6070

Size: width, 32 feet 6 inches; length, 28 feet, exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

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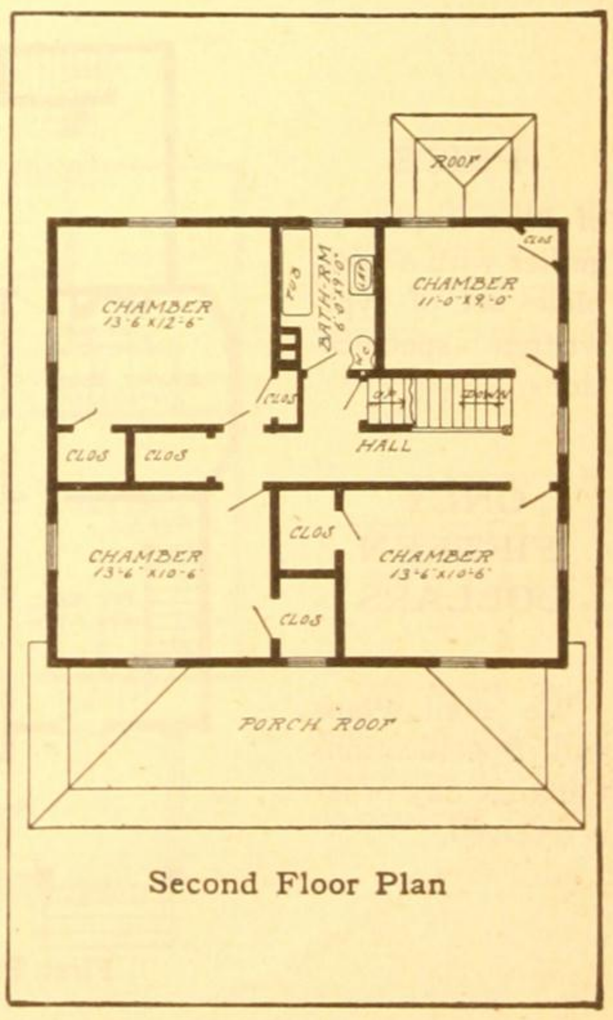
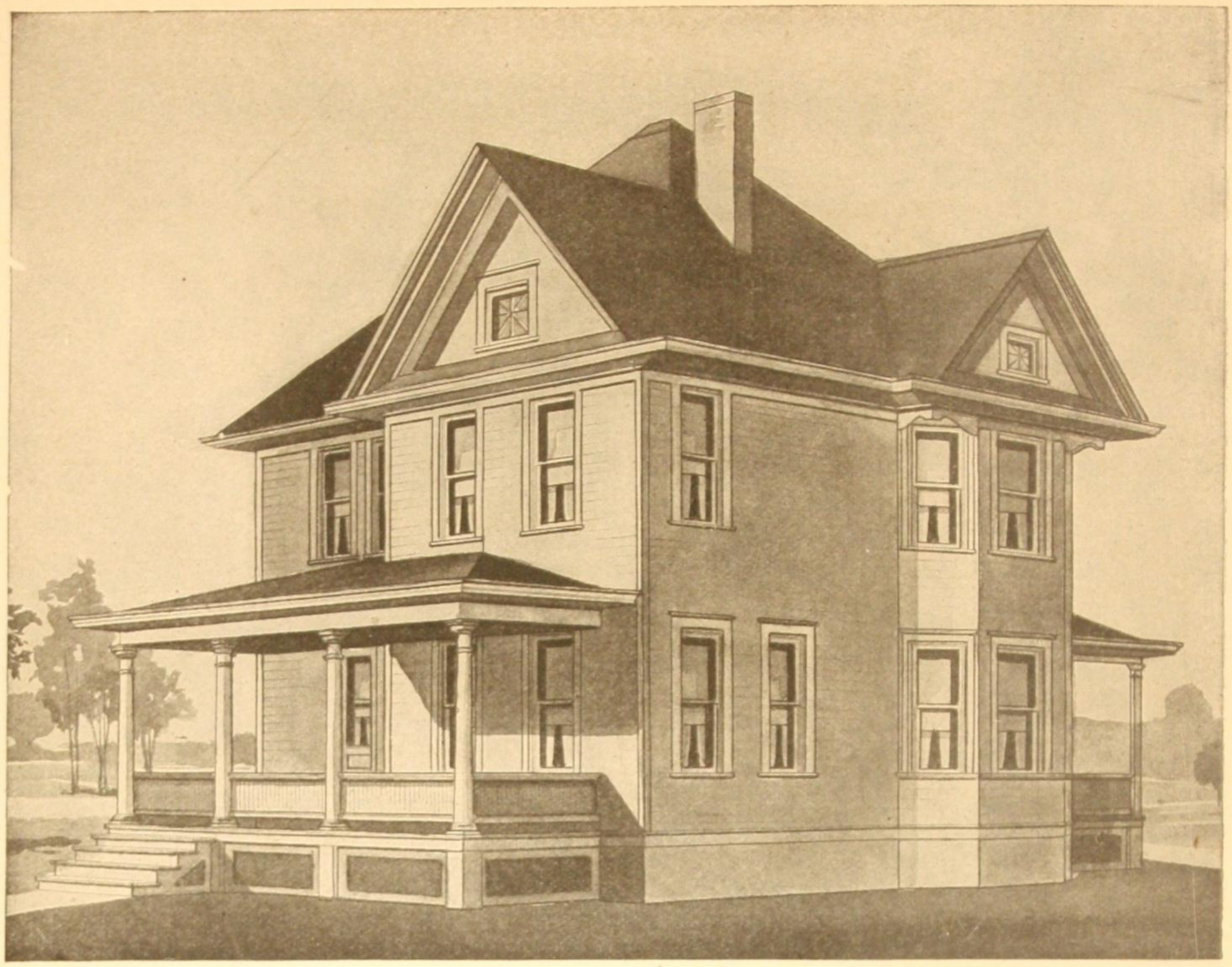


Second Floor Plan



Design No. 7036

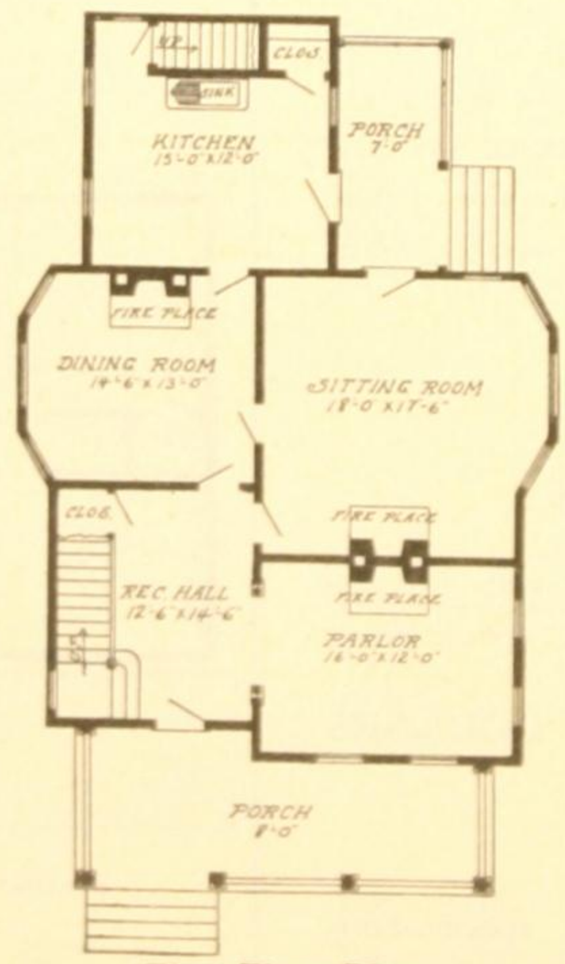
Size: Width, 34 feet; Length, 47 feet, exclusive of porches

PRICE

of Blue Prints, together with a complete set of typewritten specifications.

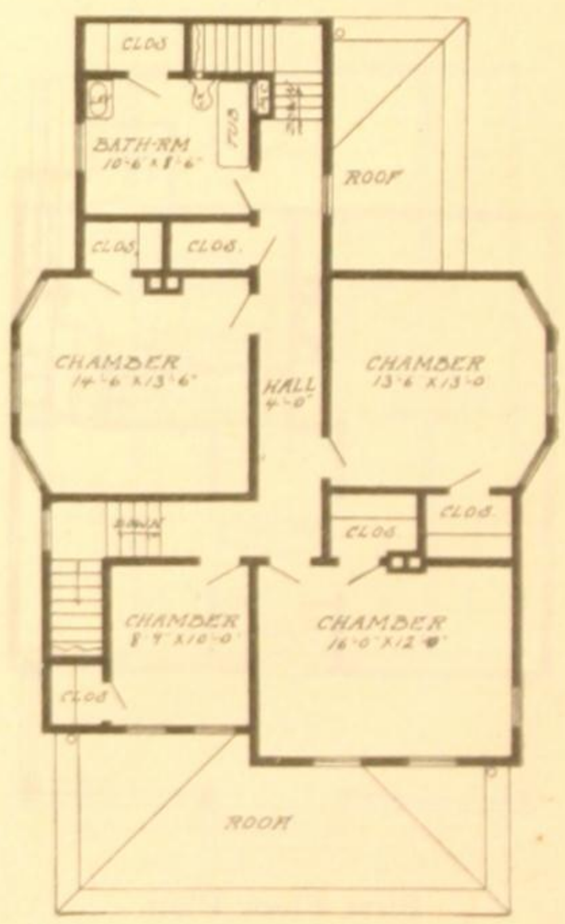
ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

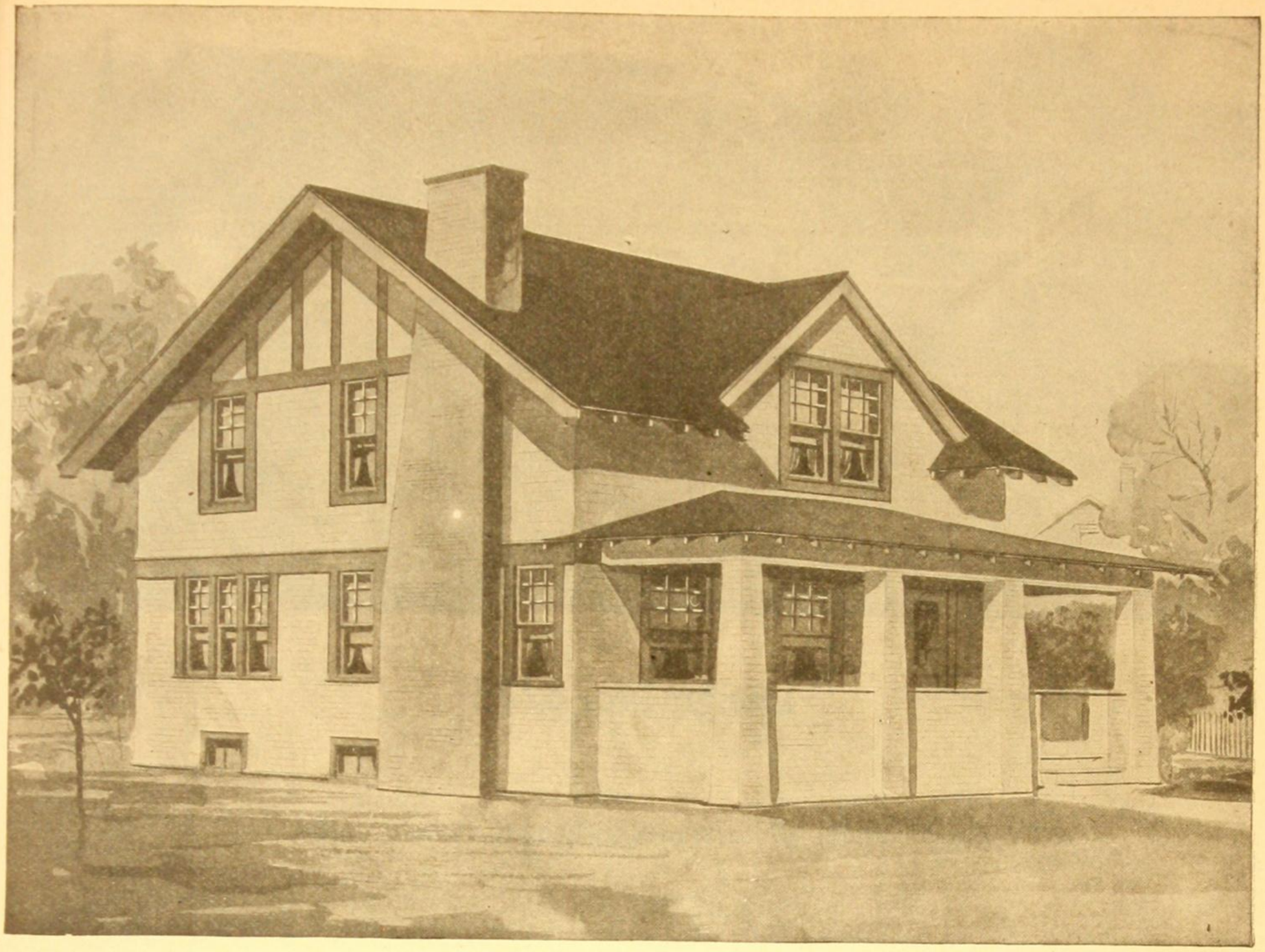


First Floor Plan

Blue Prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

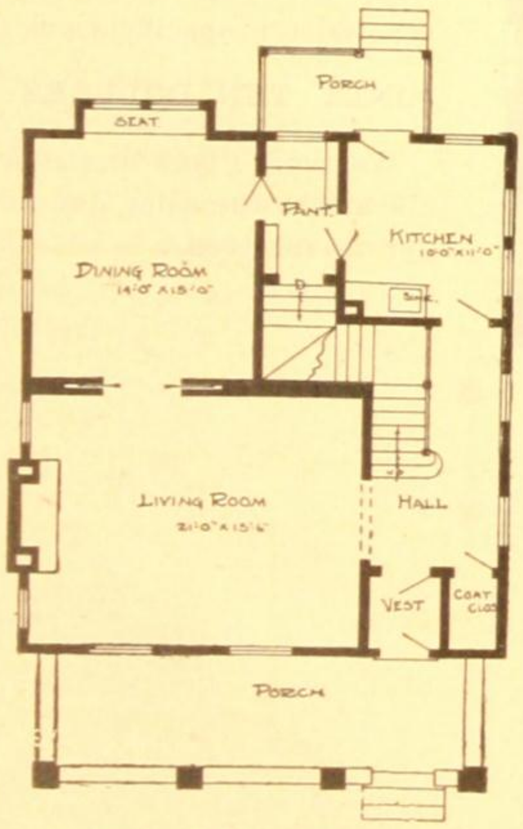


Second Floor Plan



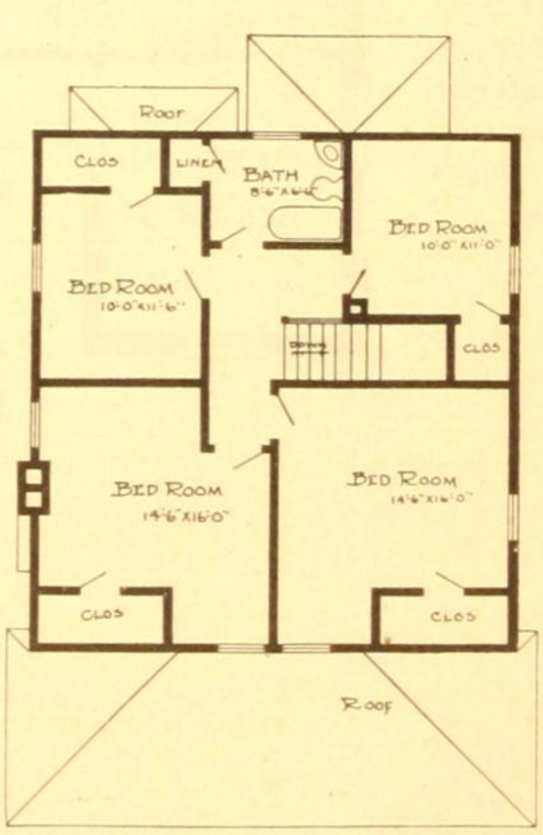
Design No. 7092

Size: Width, 30 feet 6 inches; Length, 34 feet 6 inches, exclusive of porches



First Floor Plan

Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



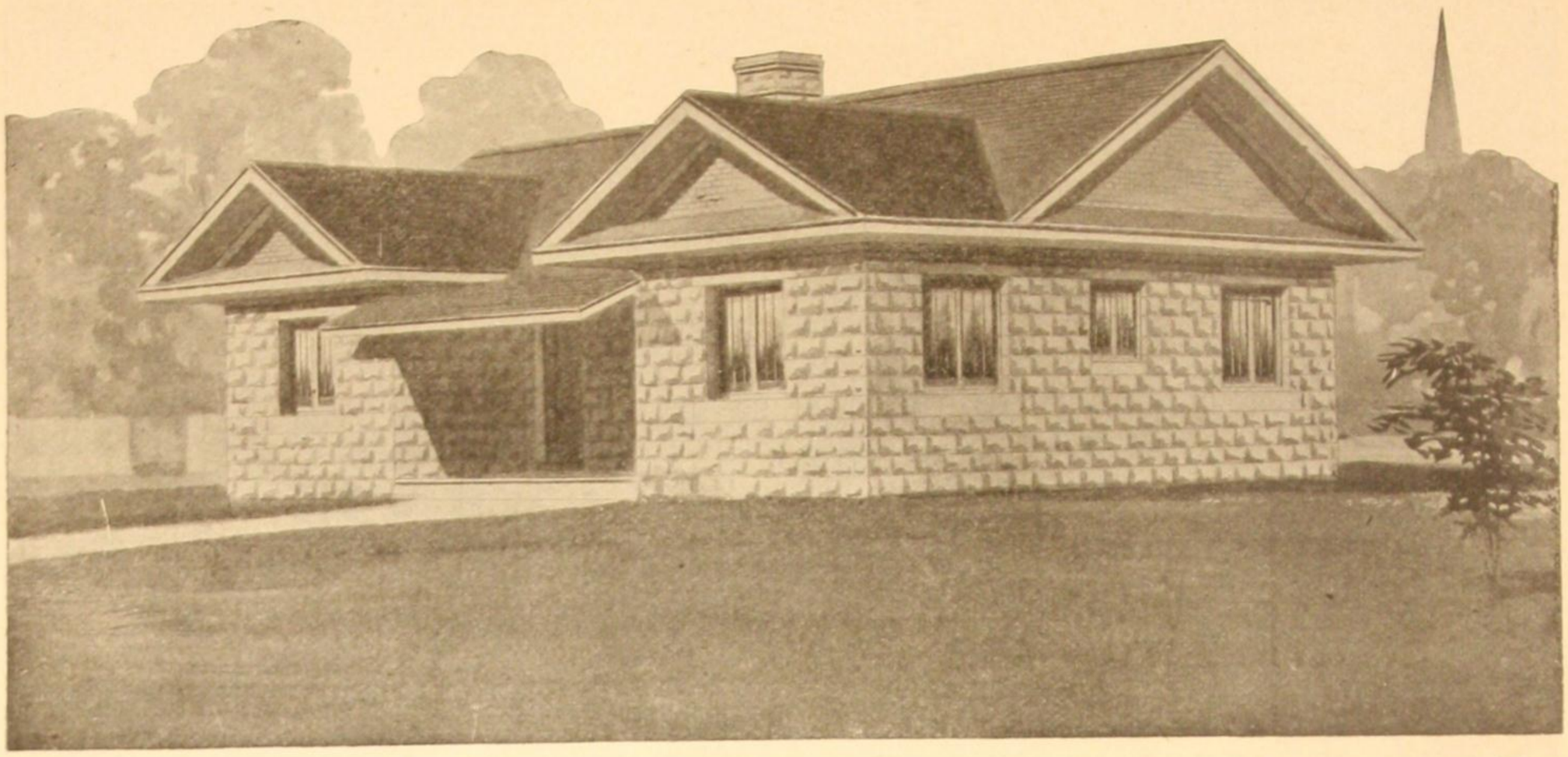
Second Floor Plan

PRICE

of Blue Prints together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

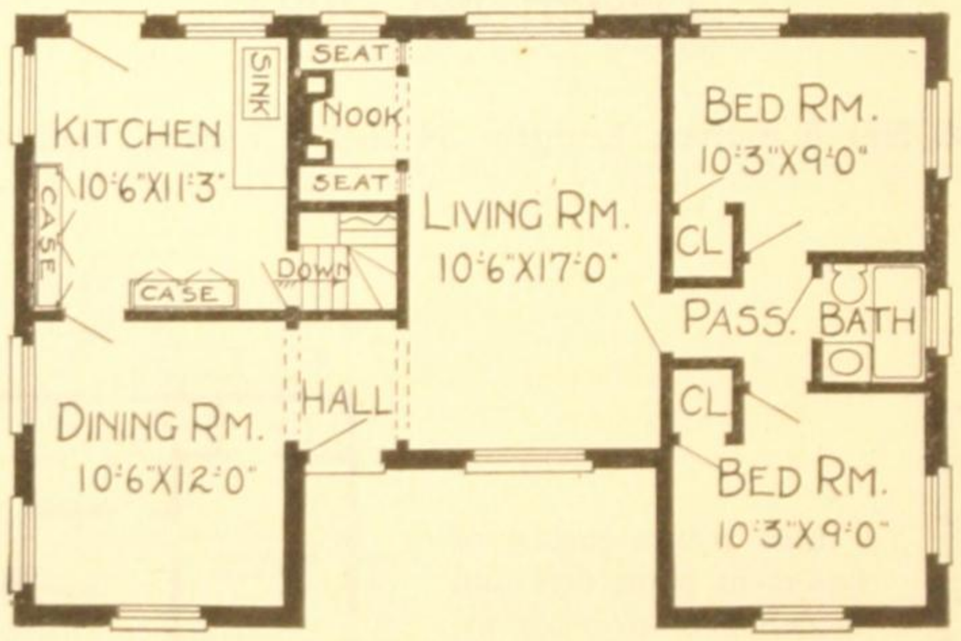
We mail Plans and Specifications the same day order is received.



Design No. 8225

Size: Width, 38 feet 4 inches; Length, 25 feet 4 inches

Blue prints consist of foundation plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twelve pages of typewritten matter.



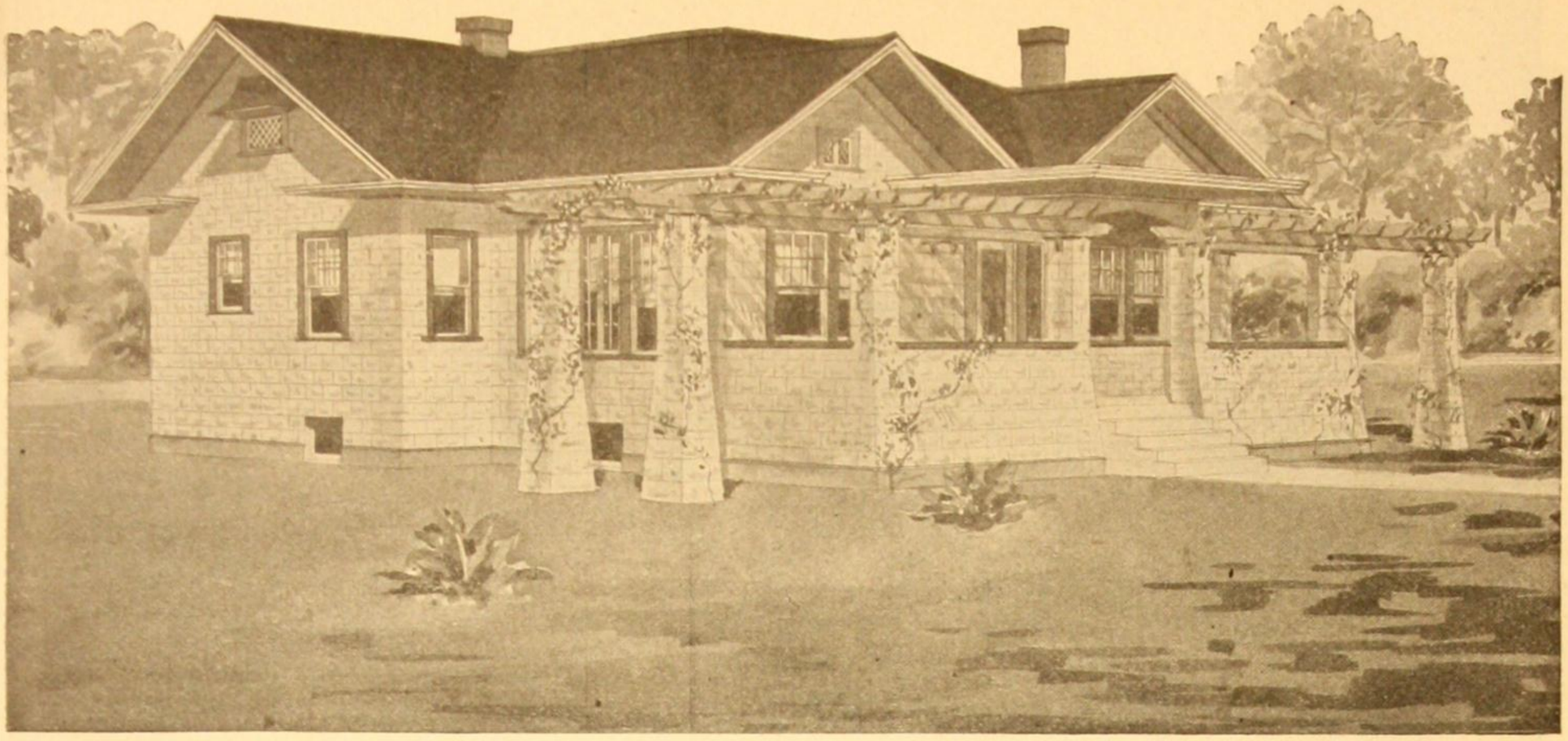
Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

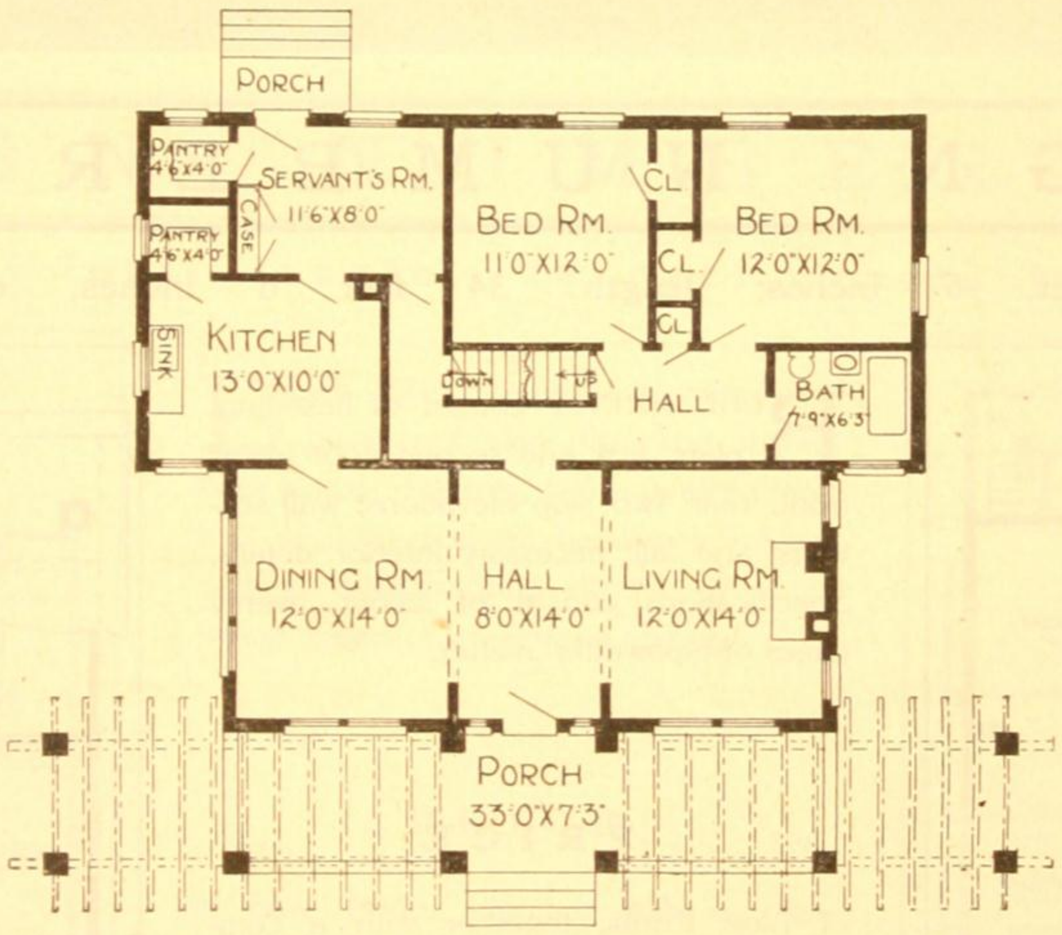
We mail Plans and Specifications the same day order is received.



Design No. 8302

Size: Width, 44 feet; Length, 34 feet 6 inches

Blue prints consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.



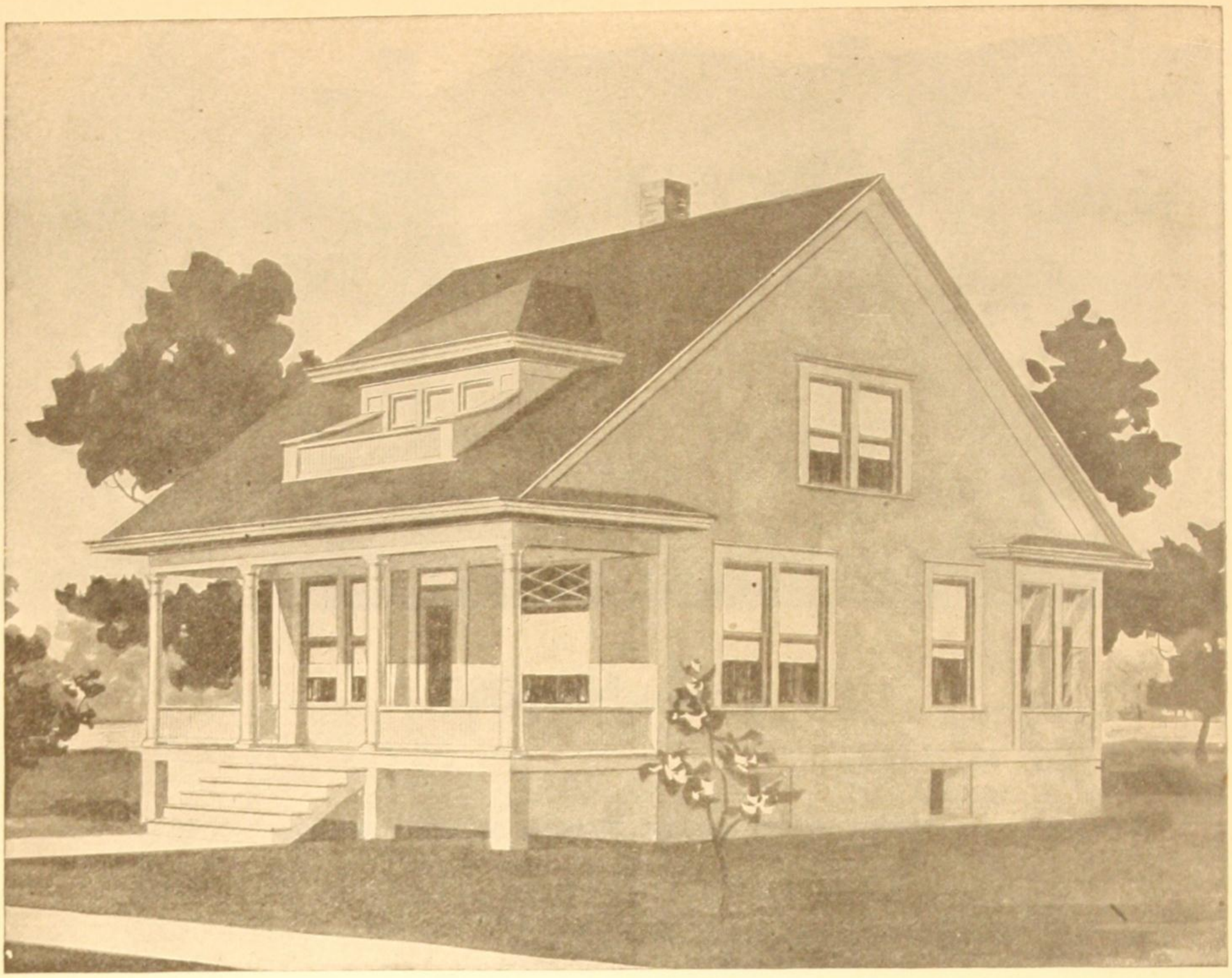
Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

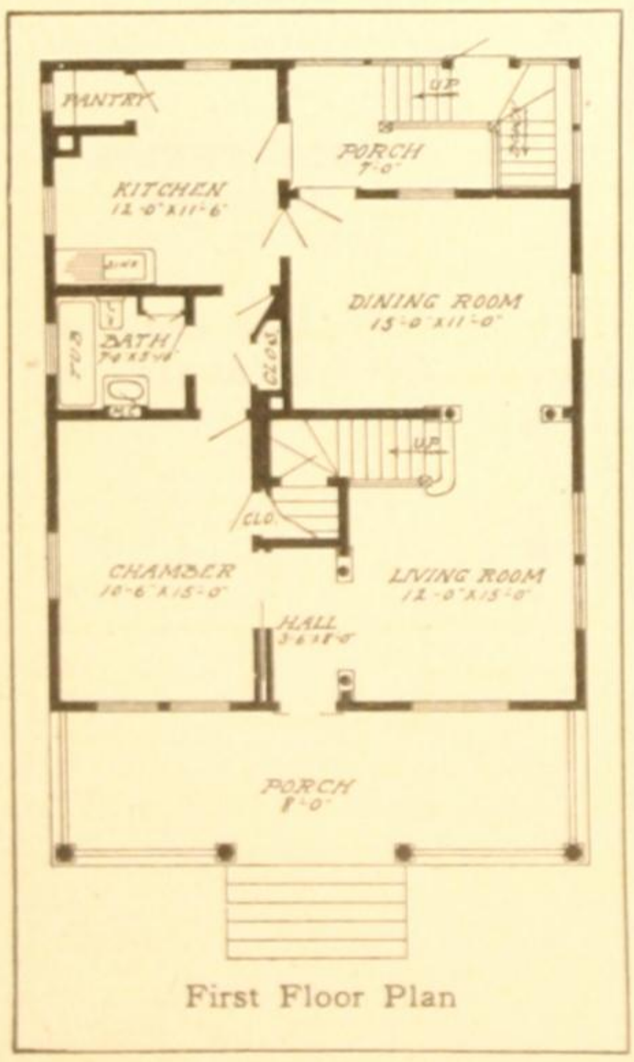
ONLY TWELVE DOLLARS

We mail Plans and Specifications same day order is received.



DESIGN NUMBER 6080

Size: width, 28 feet, 6 inches; length, 34 feet 6 inches, exclusive of porches



First Floor Plan

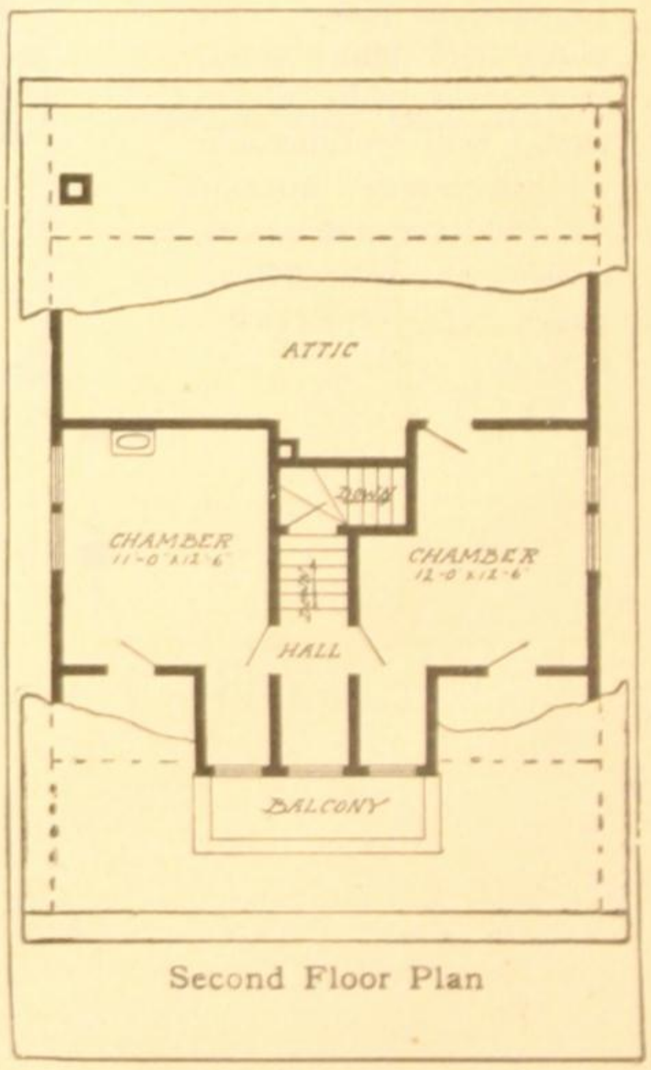
BLUE PRINTS consist of basement plan; first and second floor plans; front, rear two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

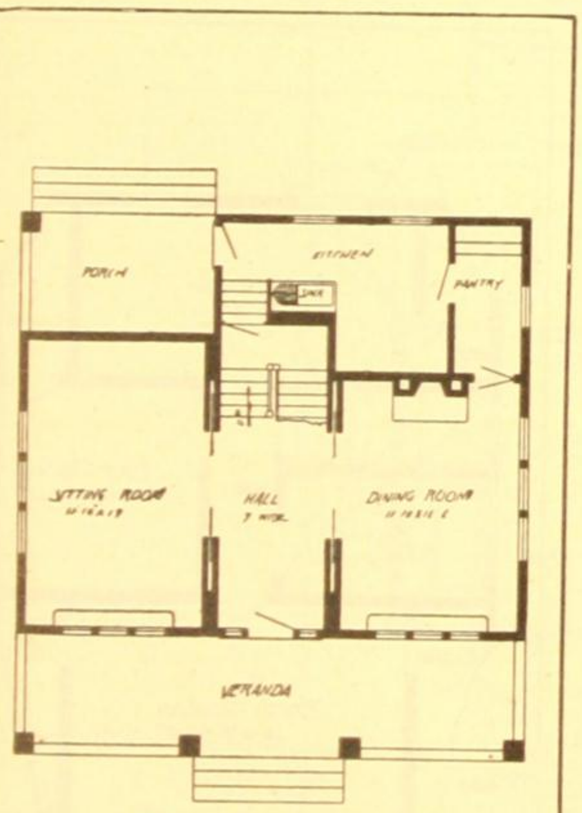
We mail plans and specifications the same day order is received.



Second Floor Plan

DESIGN NUMBER 6030

Size: width, 34 feet; length, 28 feet, exclusive of porches



First Floor Plan

BLUE PRINTS consist of foundation plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

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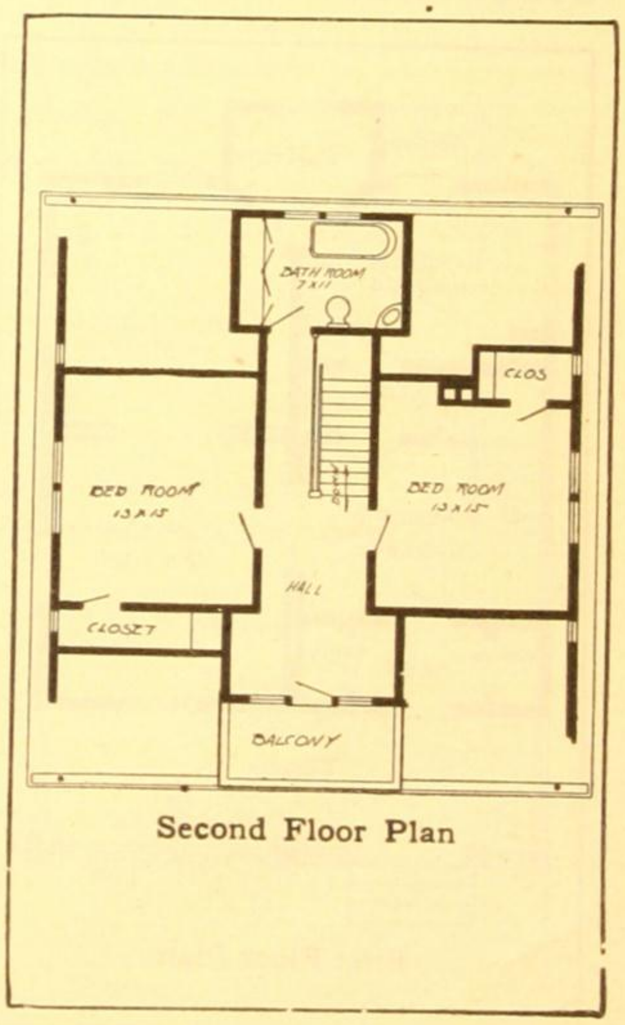
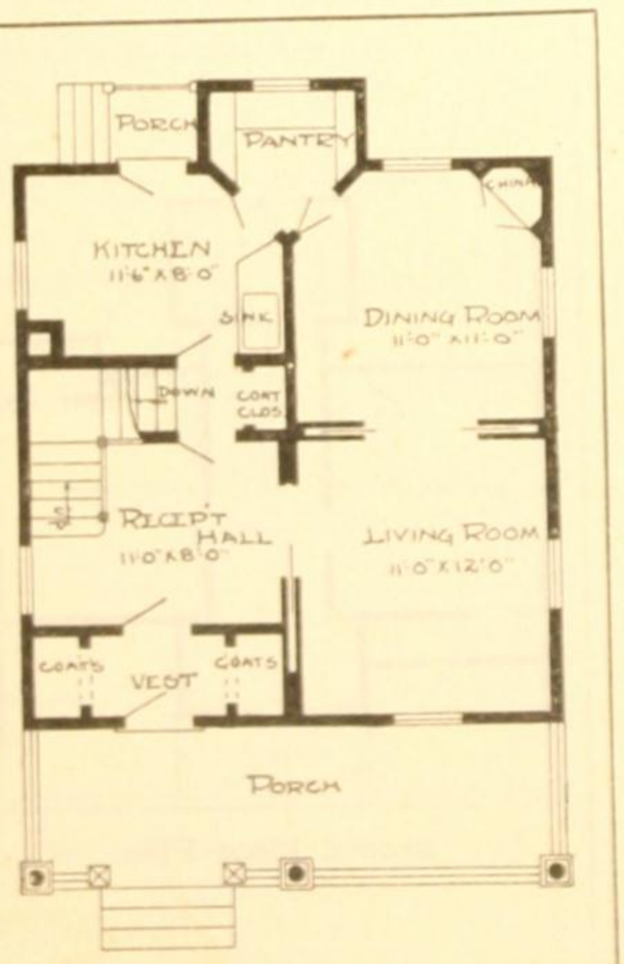


Second Floor Plan

DESIGN NUMBER 6034

Size: width, 23 feet 10 inches; length, 25 feet, exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

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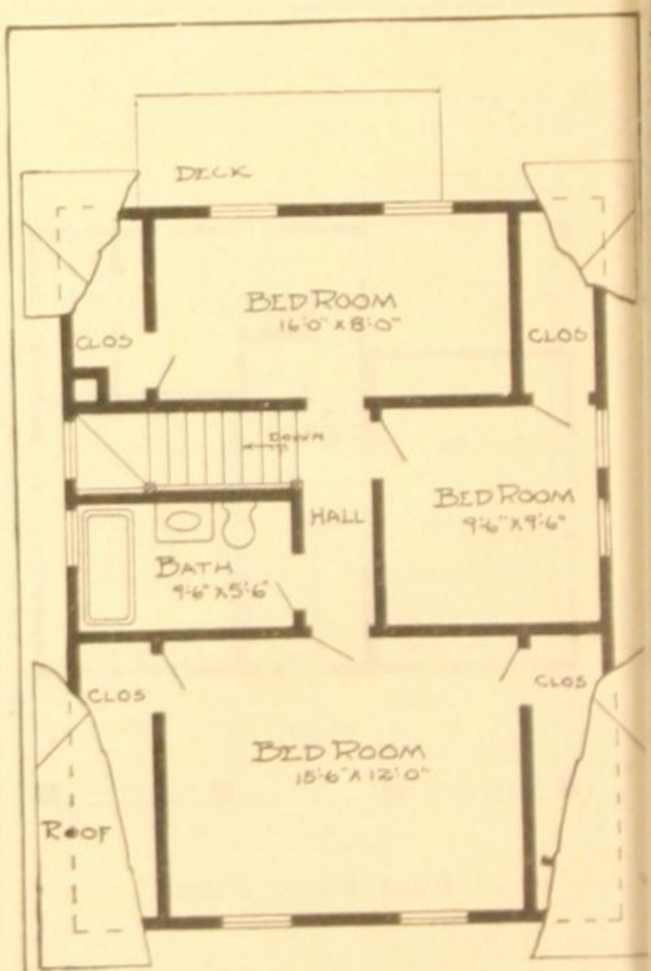
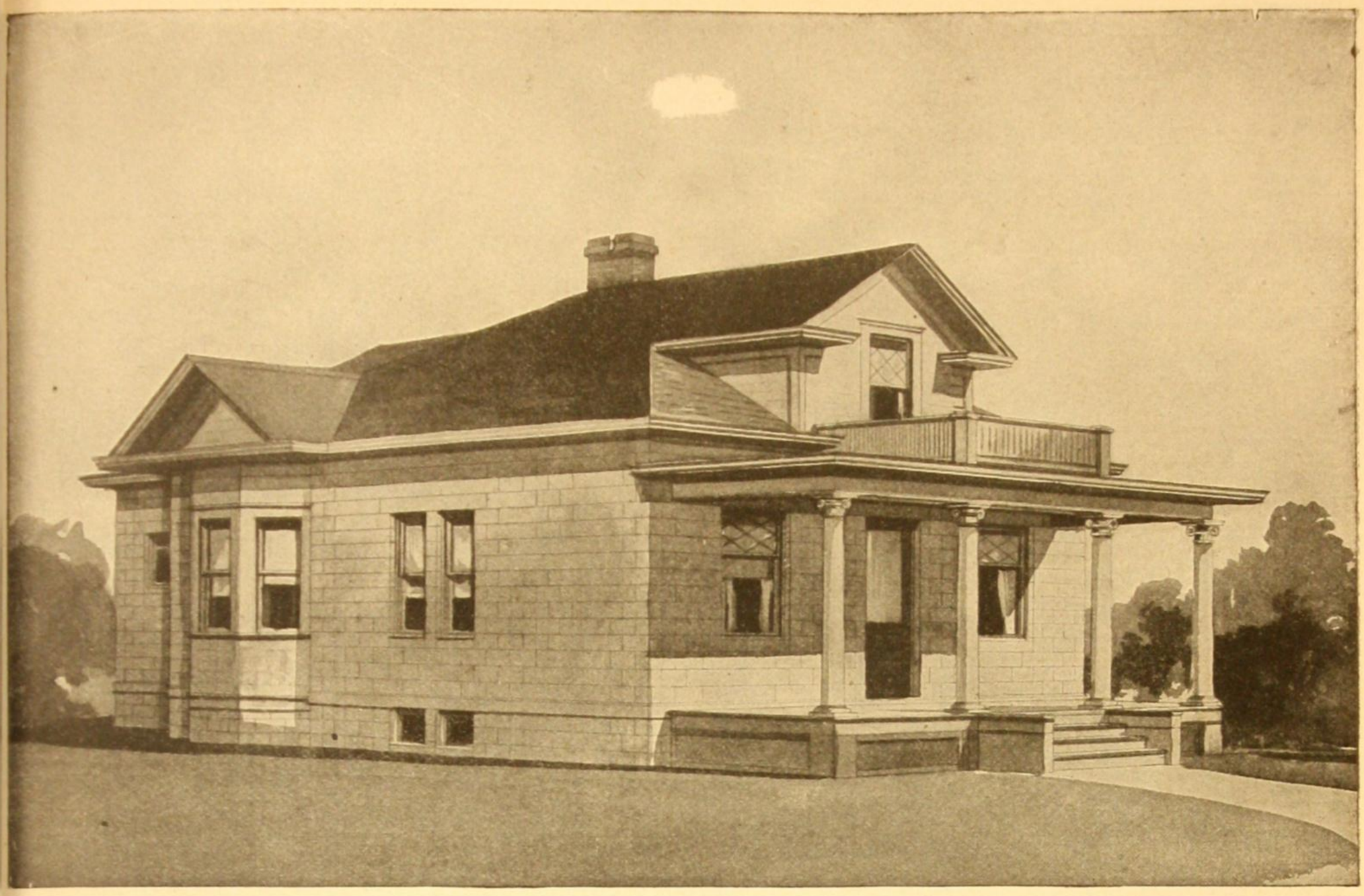
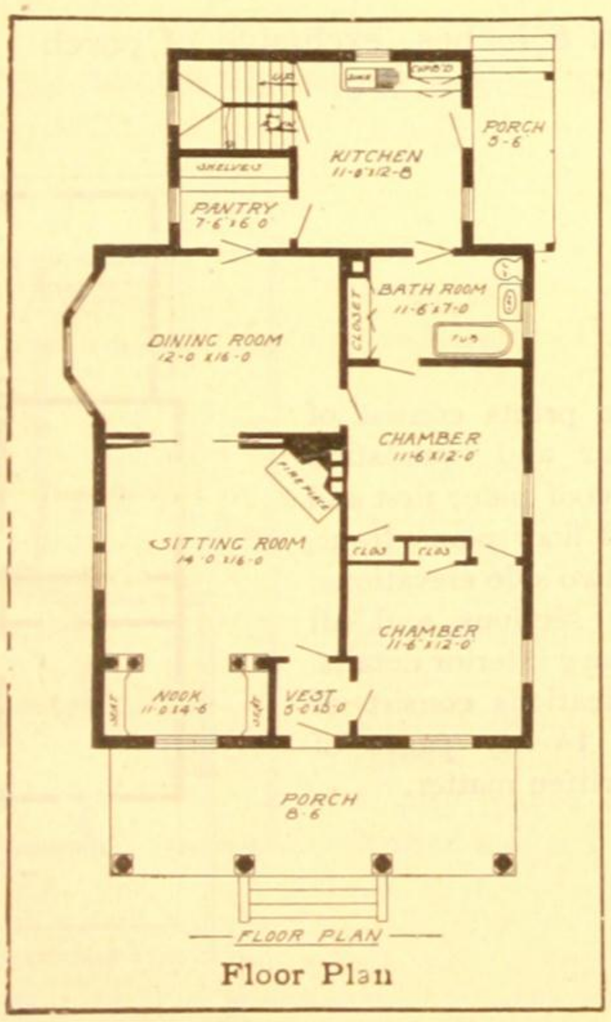


Second Floor Plan



DESIGN NUMBER 6029

Size: Width, 30 feet, 4 inches; length, 47 feet, 4 inches exclusive of porches



Floor Plan

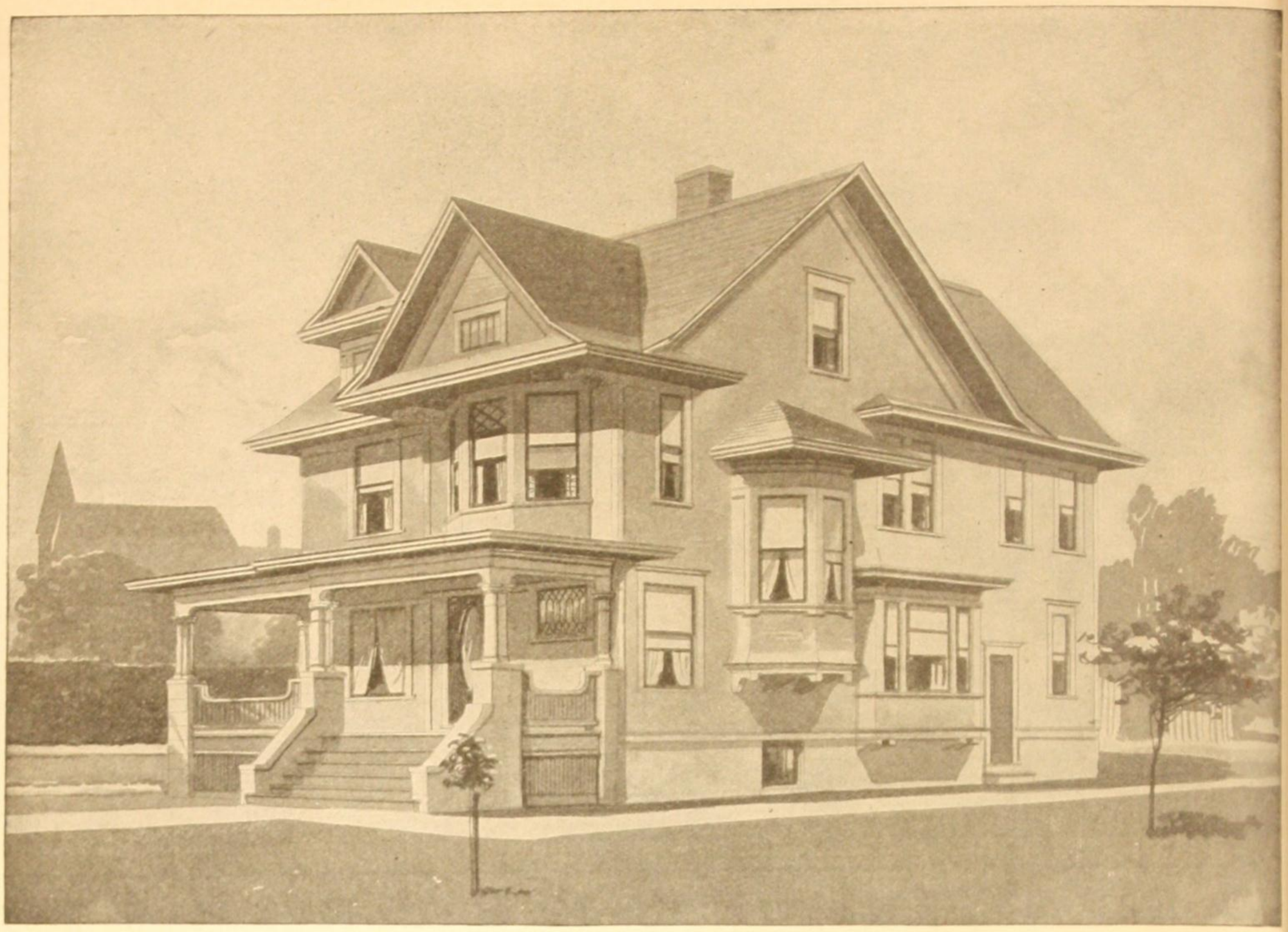
BLUE PRINTS consist of basement plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.



Design No. 7022

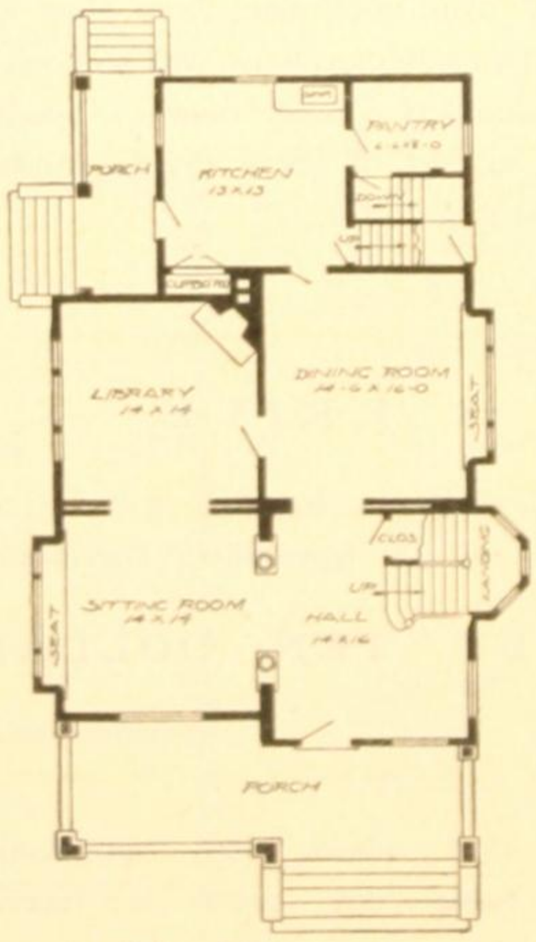
Size: Width, 30 feet; Length, 47 feet 6 inches, exclusive of porch

PRICE

of Blue Prints, together with a complete set of typewritten specifications.

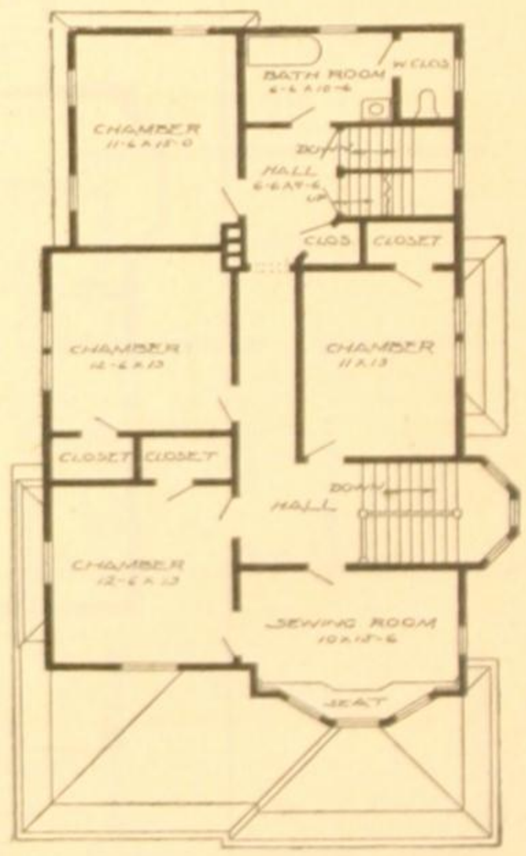
ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

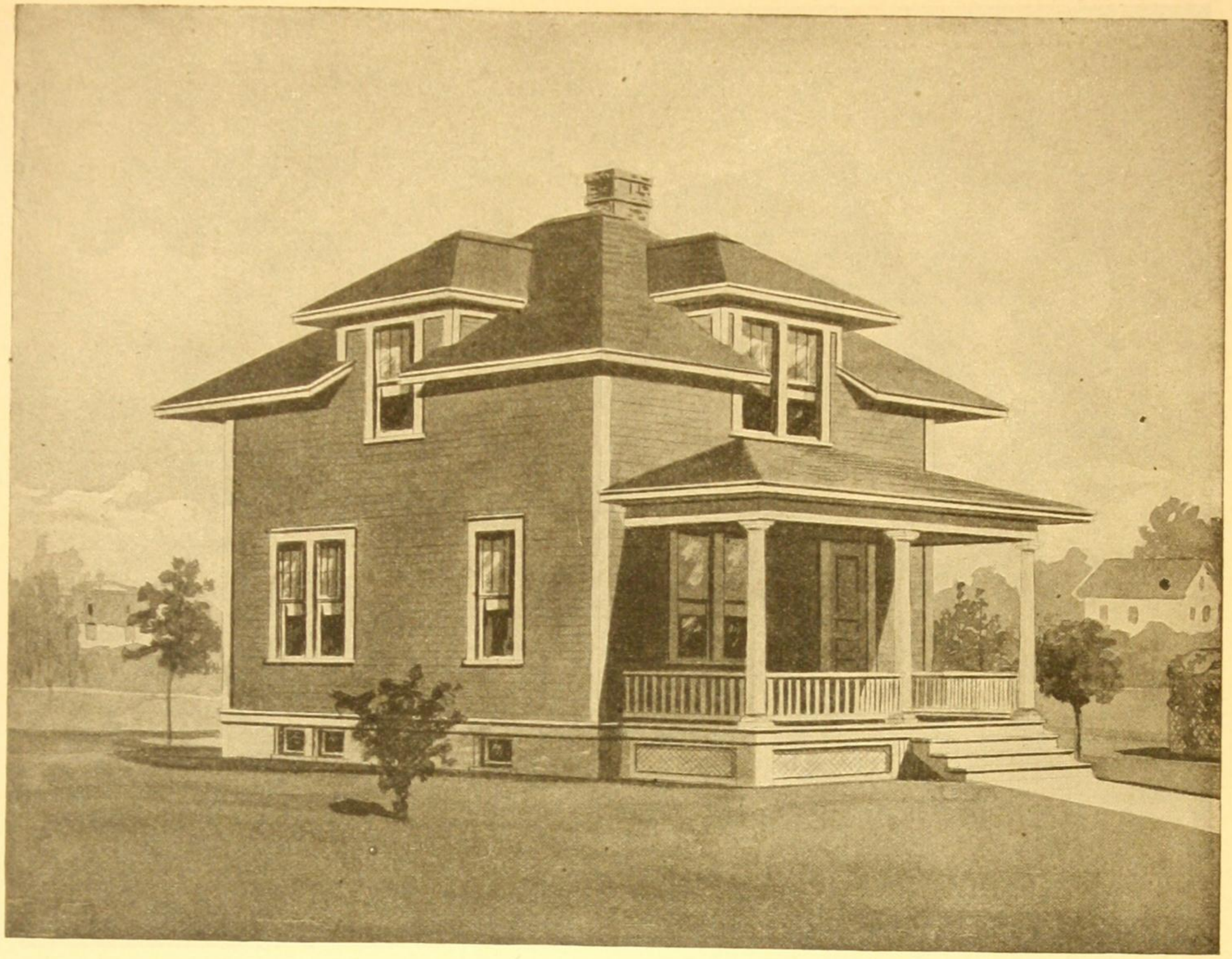


First Floor Plan

Blue prints consist of cellar and foundation plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

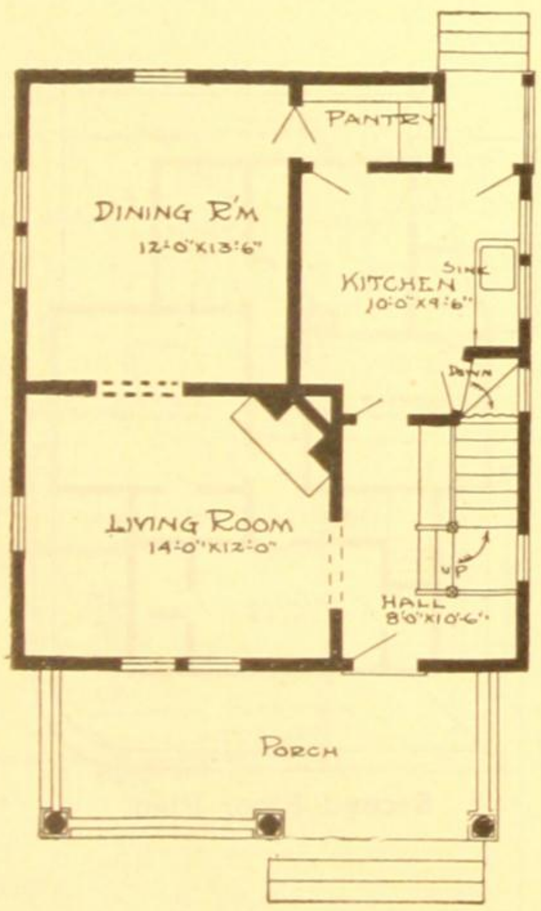


Second Floor Plan



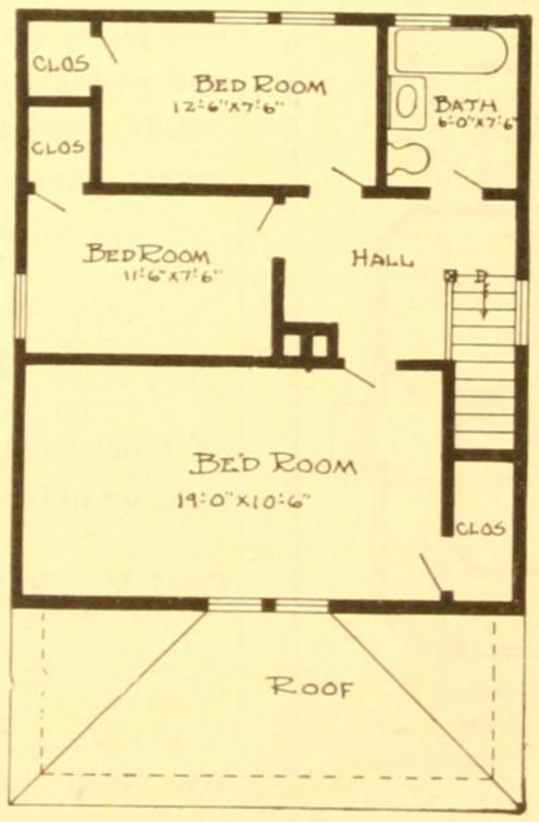
Design No. 7085

Size: Width, 23 feet 6 inches; Length, 27 feet 6 inches, exclusive of porches



First Floor Plan

Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



Second Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

Design No. 7022

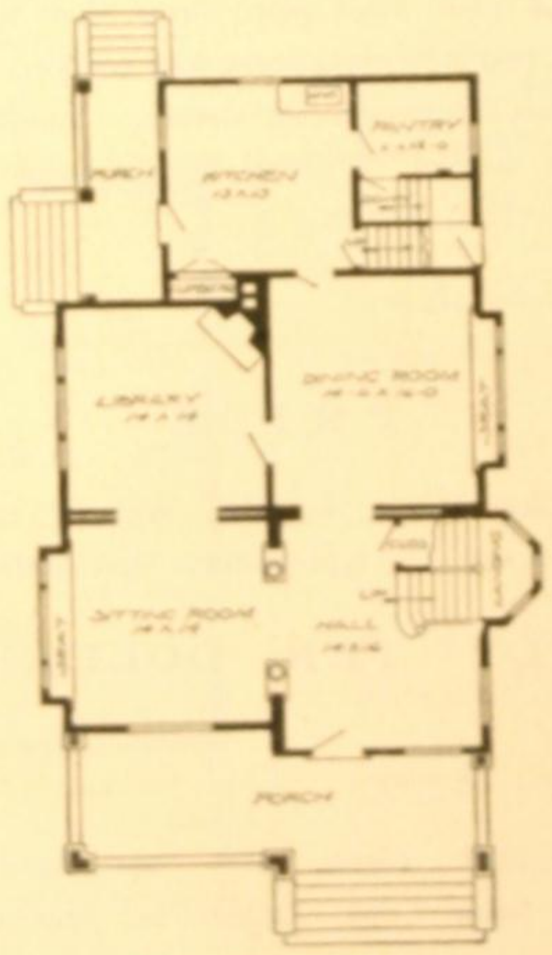
Size: Width, 30 feet; Length, 47 feet 6 inches, exclusive of po

PRICE

of Blue Prints, together with a complete set of typewritten specifications.

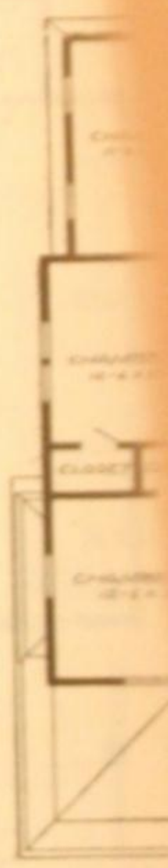
ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

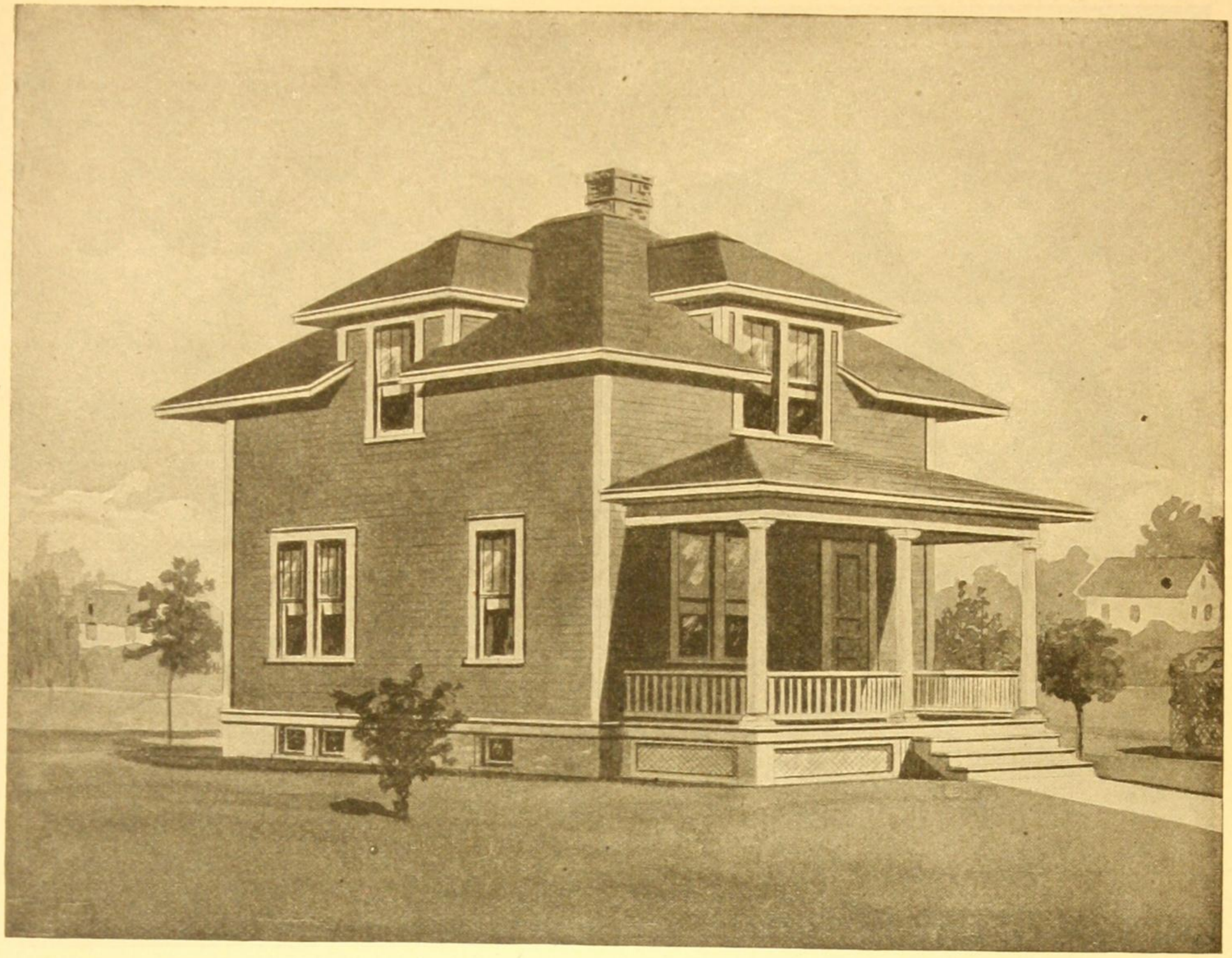


First Floor Plan

Blue prints consist of cellar and foundation plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

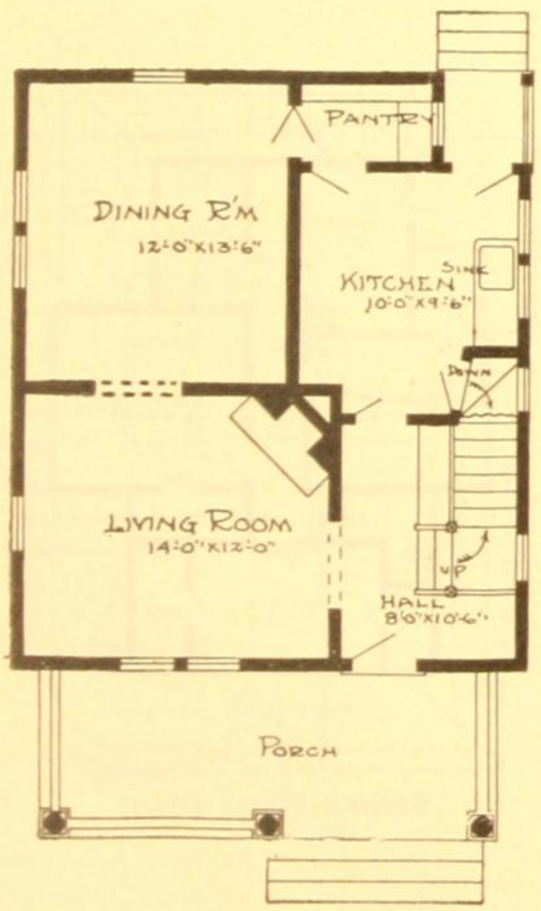


Second



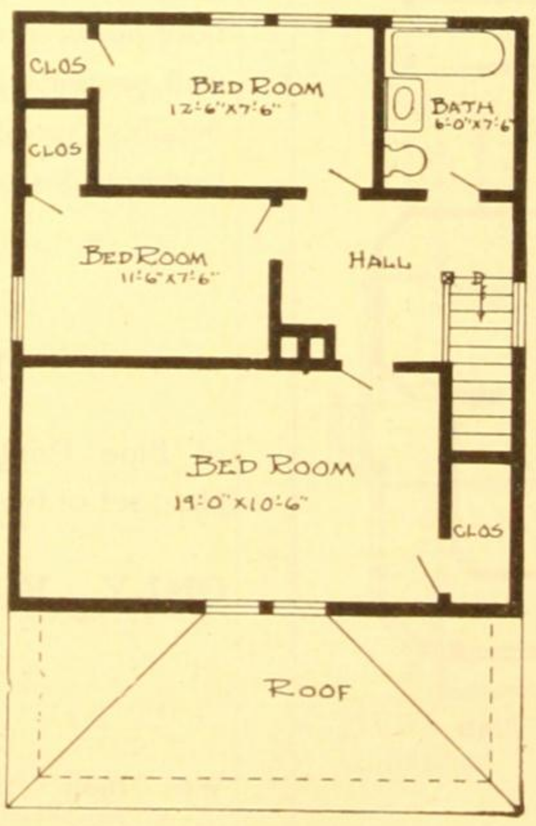
Design No. 7085

Size: Width, 23 feet 6 inches; Length, 27 feet 6 inches, exclusive of porches



First Floor Plan

Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



Second Floor Plan

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

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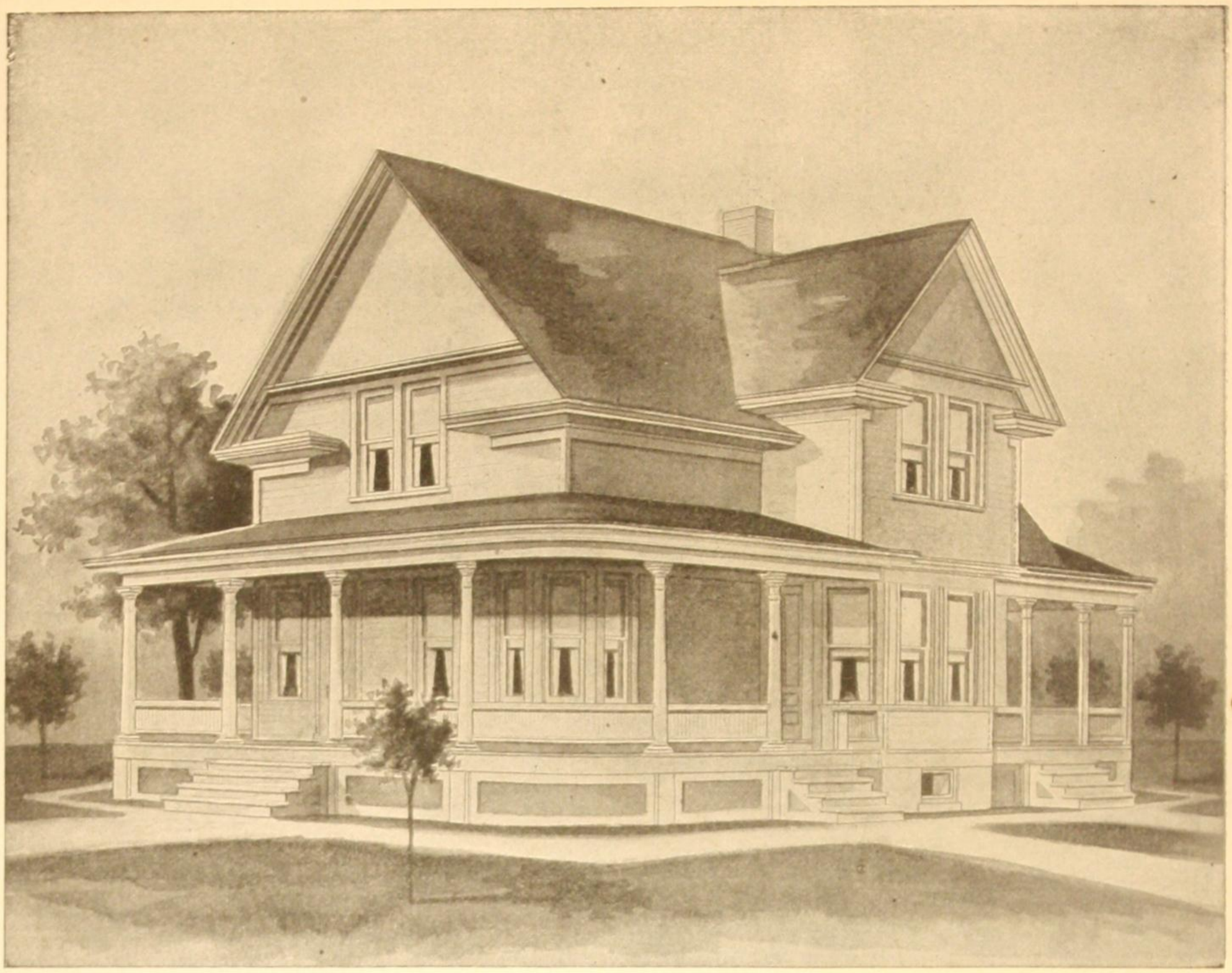
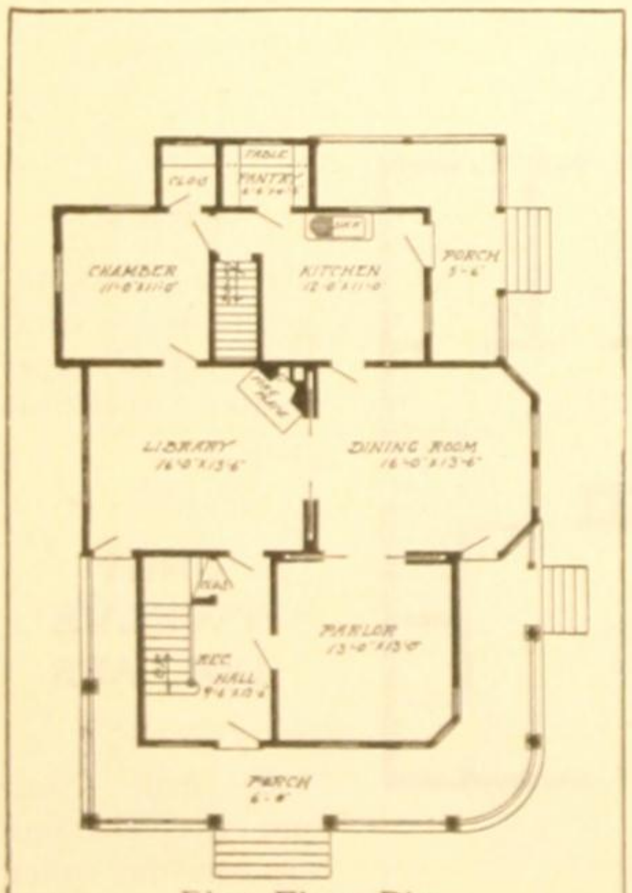


DESIGN NUMBER 6044

Size: width, 36 feet; length, 45 feet, exclusive of porches



First Floor Plan

BLUE PRINTS consist of cellar and foundation plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications.

ONLY FIFTEEN DOLLARS

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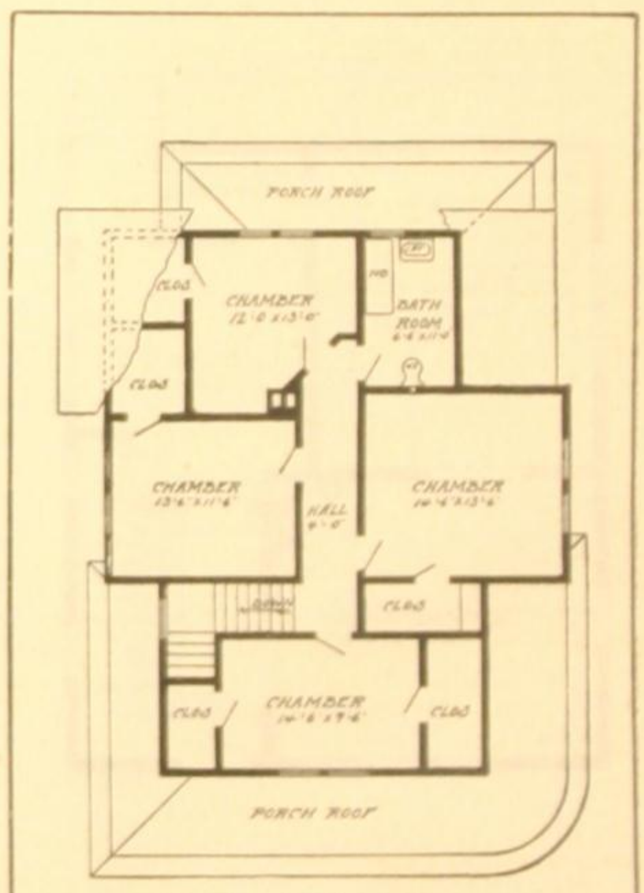
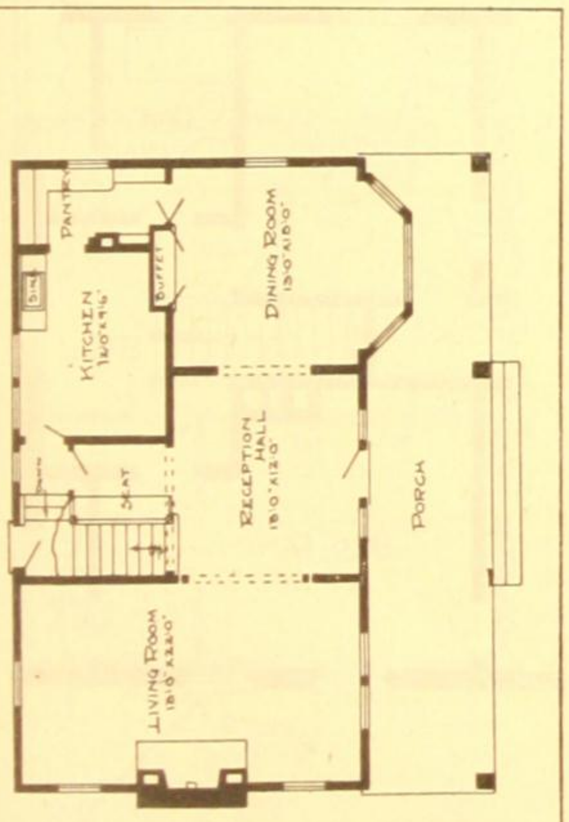


Second Floor Plan

DESIGN NUMBER 6056

Size: Width, 41 feet; Length, 23 feet, exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

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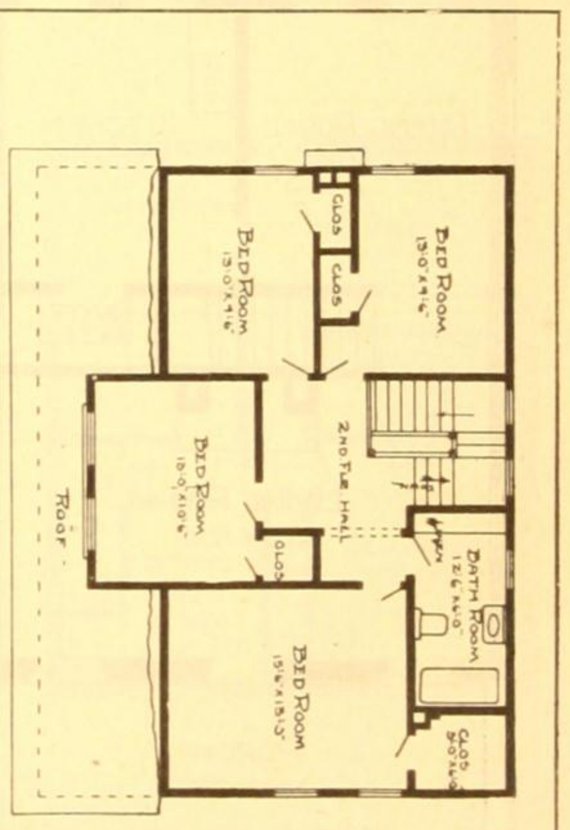
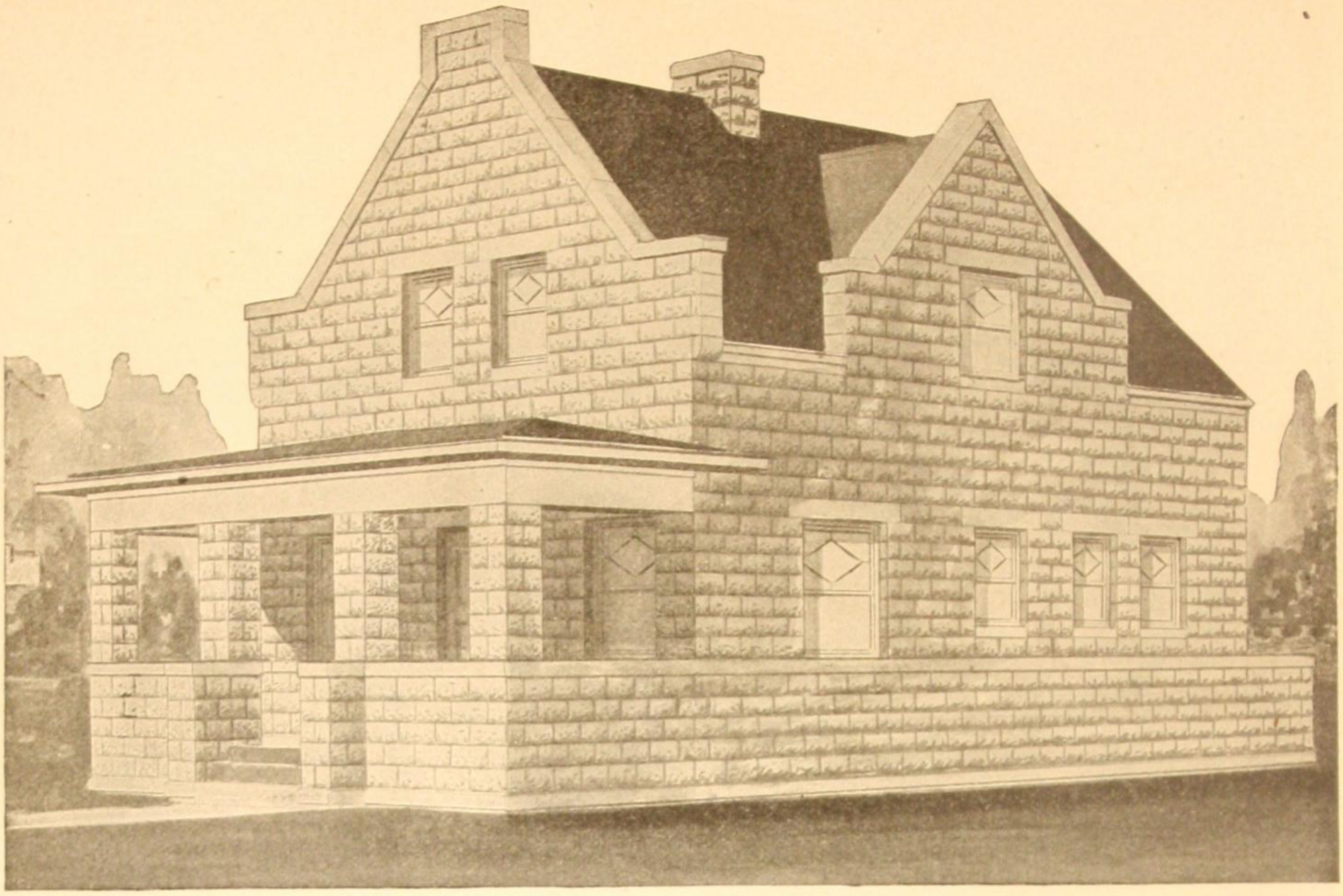
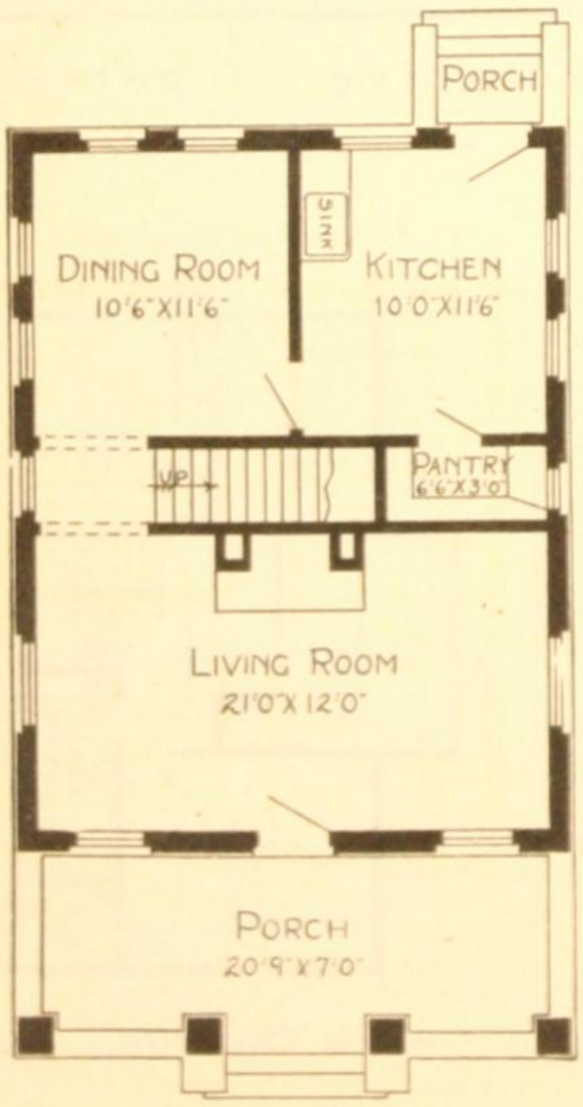


Second Floor Plan



Design No. 8208

Size: Width, 22 feet 8 inches; Length, 29 feet 8 inches



First Floor Plan

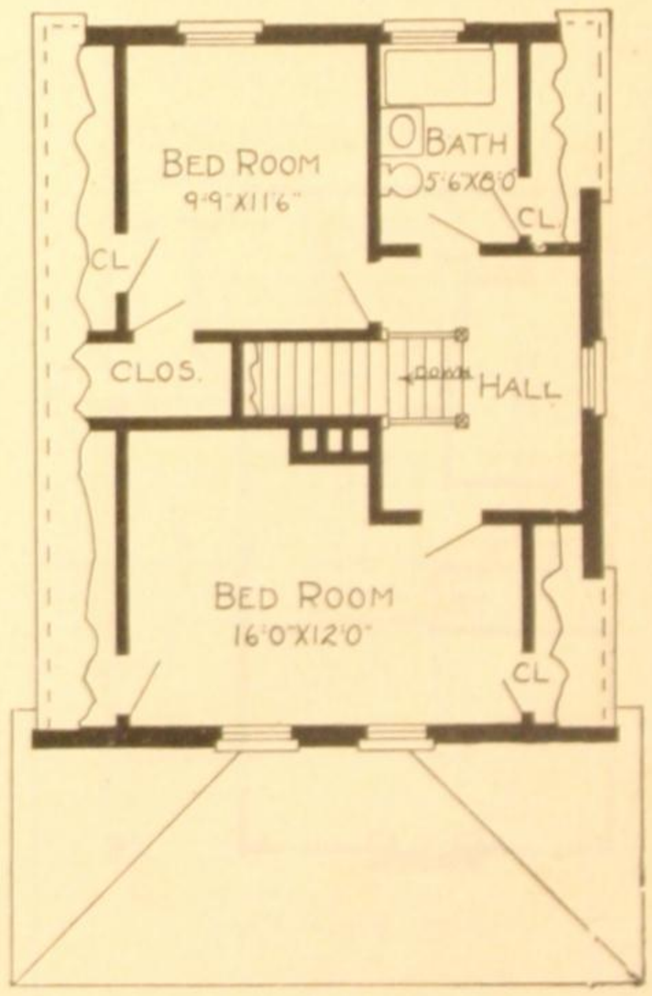
Blue prints consist of foundation plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

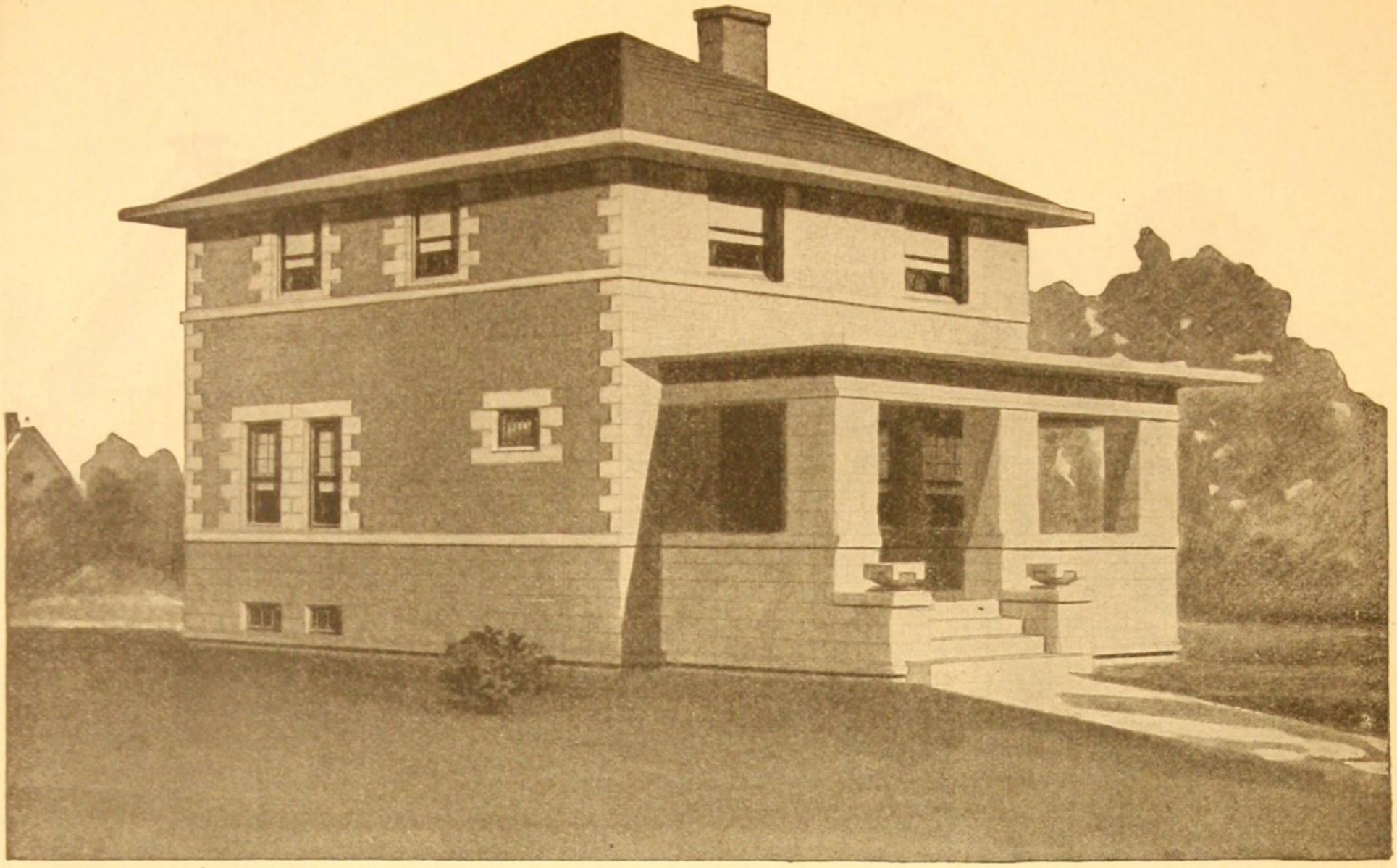
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

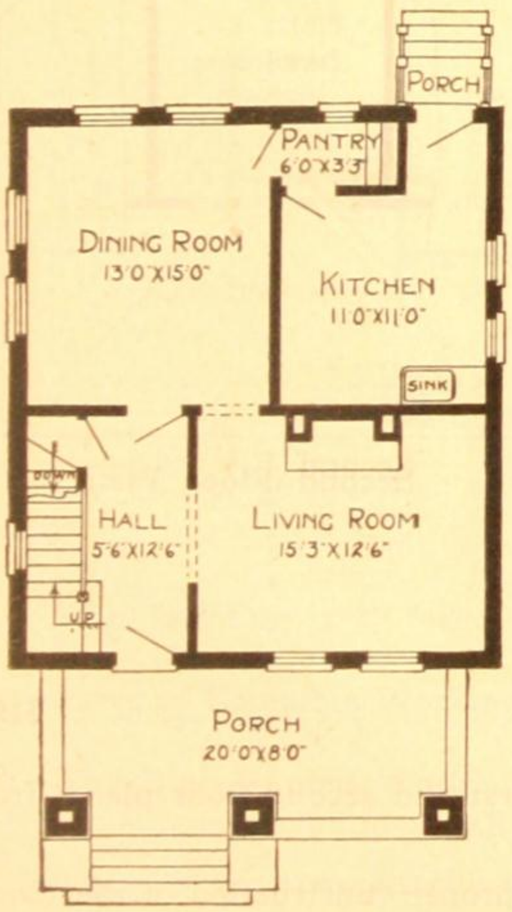


Second Floor Plan



Design No. 8198

Size: Width, 26 feet; Length, 29 feet 4 inches



First Floor Plan

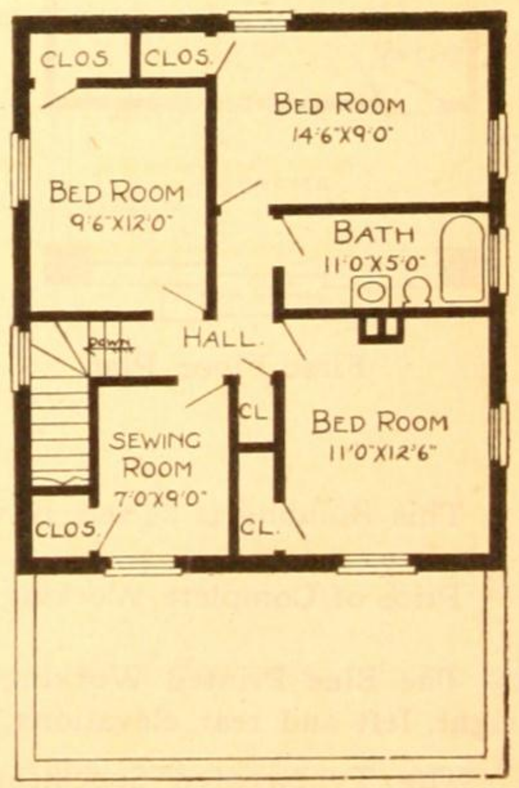
Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary details. Specifications consist of about twenty pages of typewritten matter.

PRICE

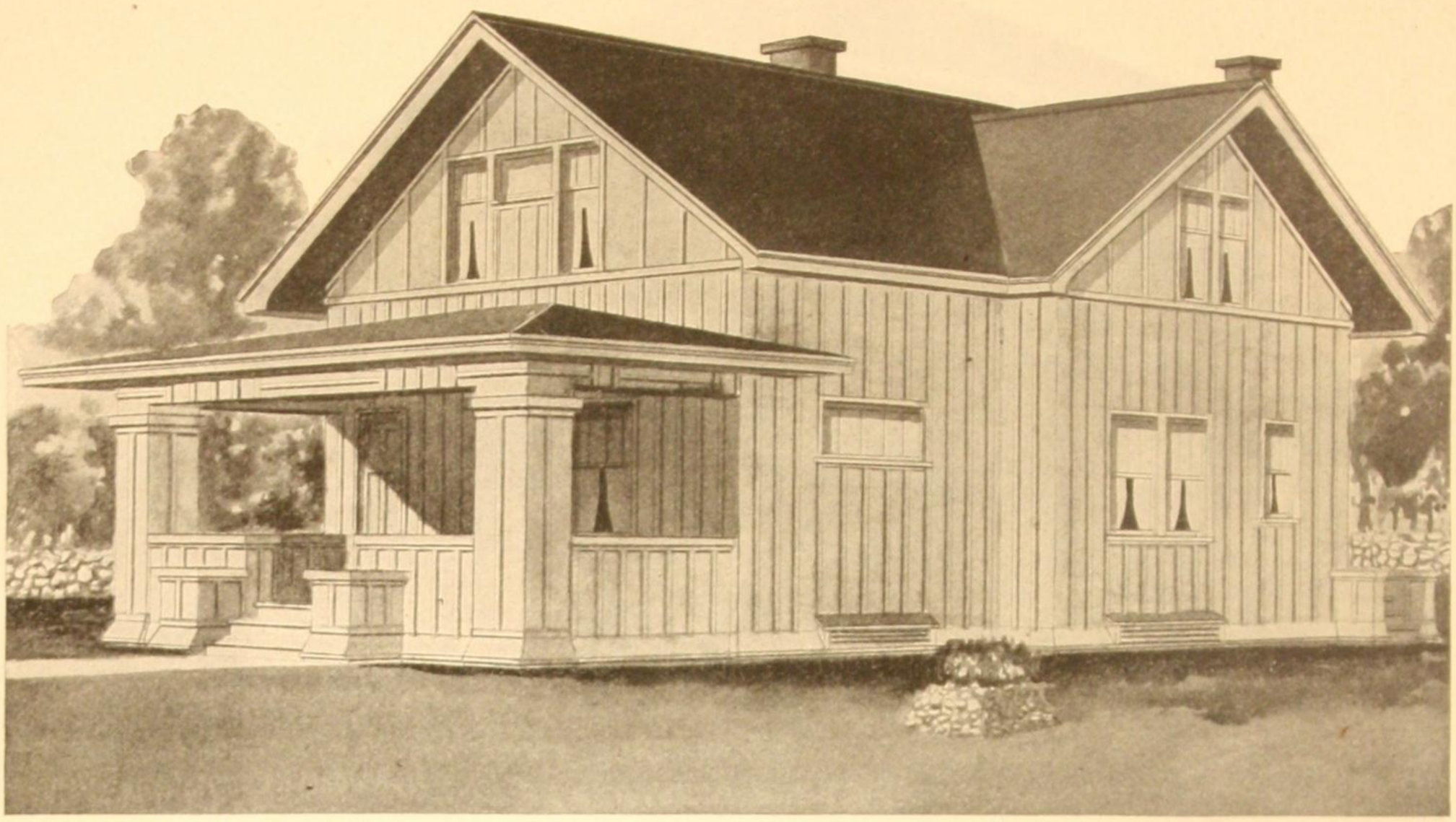
of Blue Prints, together with a complete set of typewritten specifications

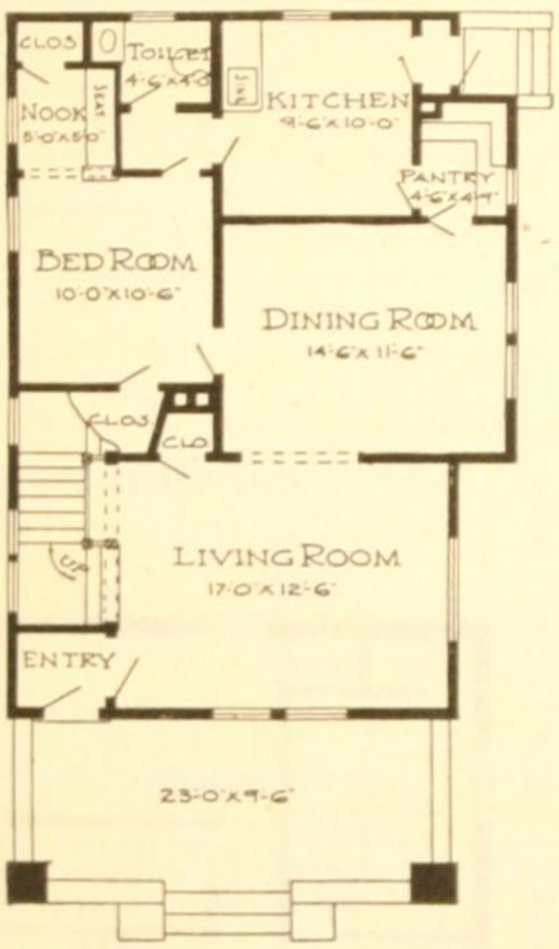
ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.



Second Floor Plan





First Floor Plan.

Design No. 9058

The arrangement of this House is as follows:

FIRST FLOOR.

Living Room, 17 feet by 12 feet 6 inches.

Dining Room, 14 feet 6 inches by 11 feet 6 inches.

Kitchen, 9 feet 6 inches by 10 feet.

Bedroom, 10 feet by 10 feet 6 inches.

Nook, 5 feet by 5 feet.

Lavatory, 4 feet 6 inches by 4 feet.

Pantry and Front Porch.

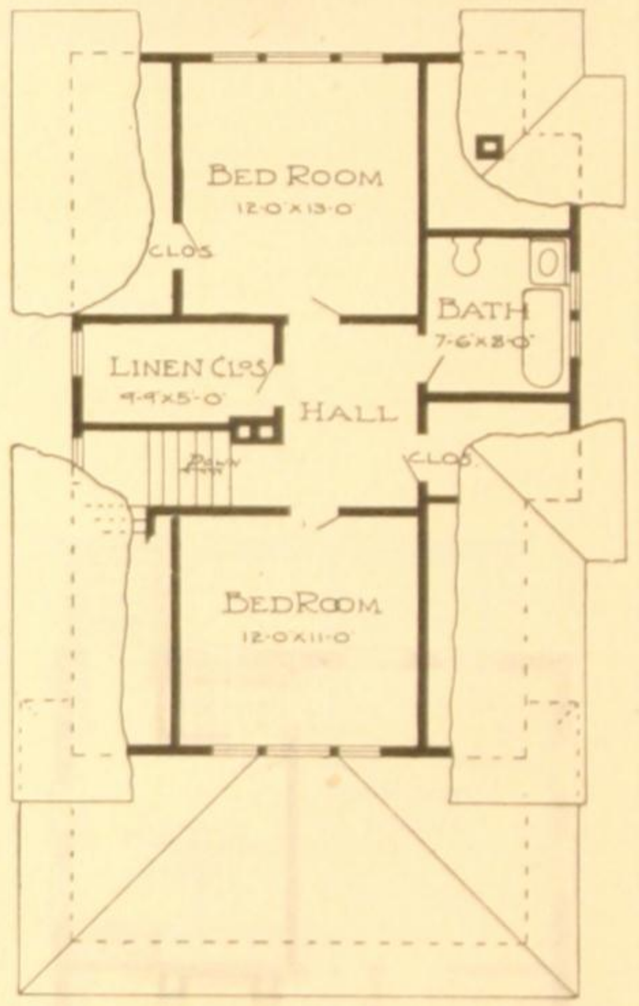
SECOND FLOOR.

Bedroom, 12 feet by 11 feet.

Bedroom, 12 feet by 13 feet.

Bathroom, 7 feet 6 inches by 8 feet.

6 Closets.



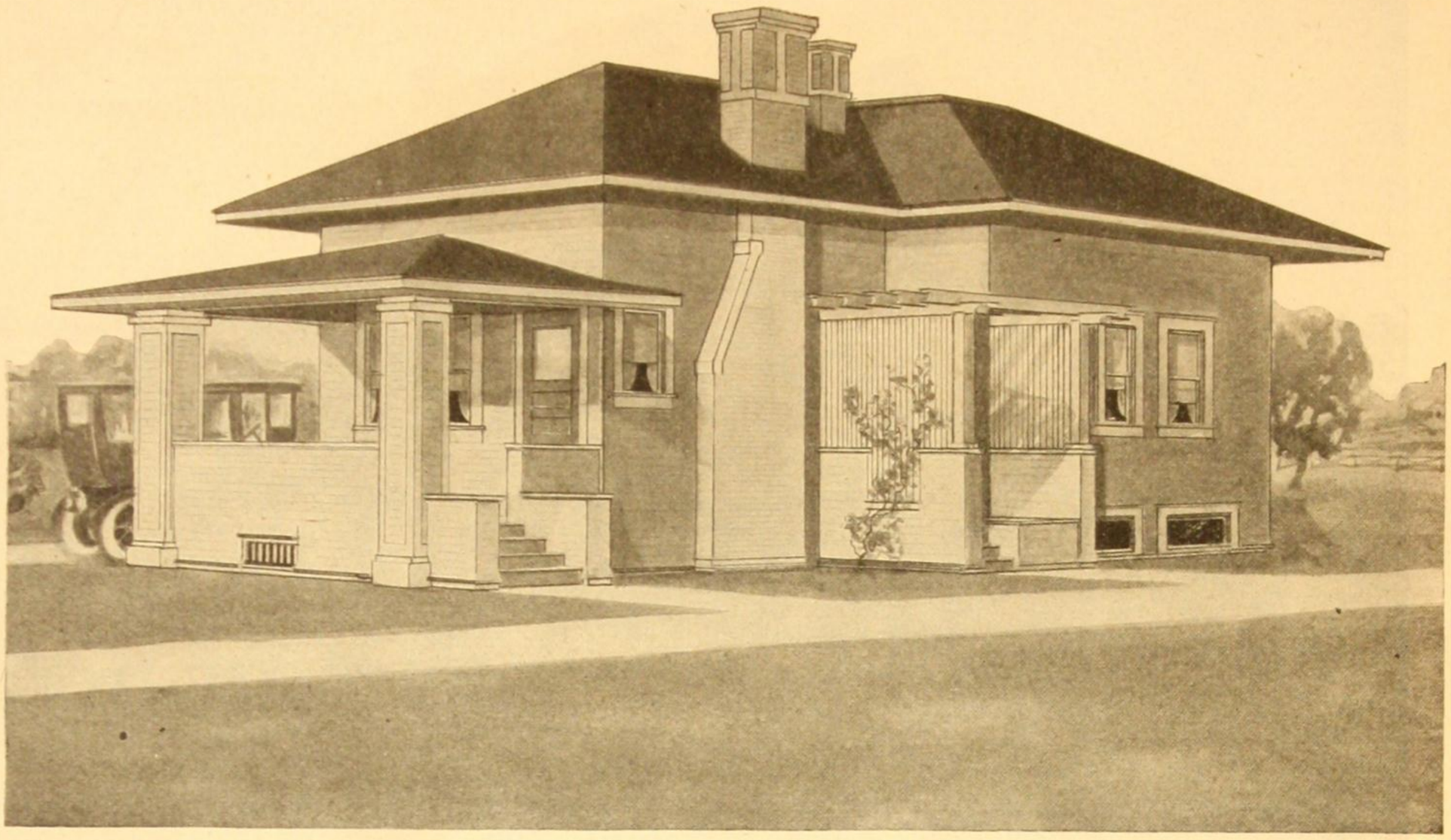
Second Floor Plan.

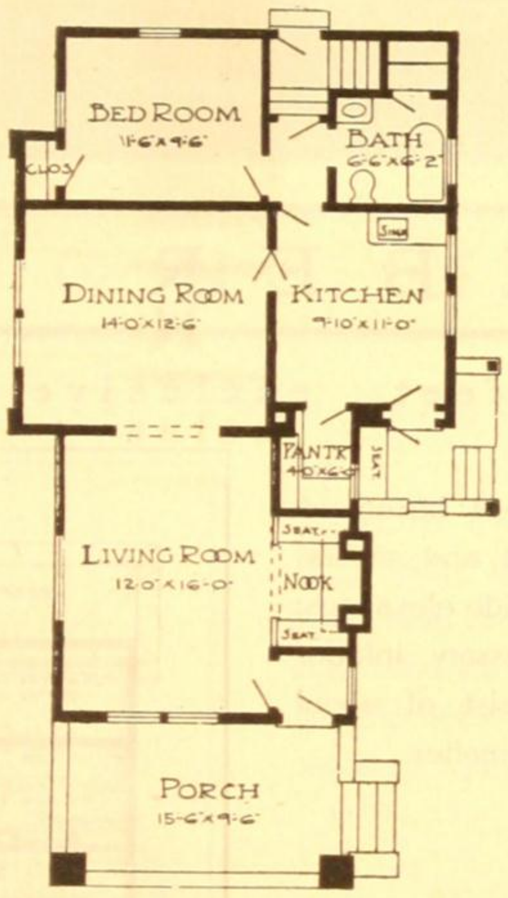
This Building is 26 feet in width; 36 feet in length.

Price of Complete Working Plans and Specifications..... $12.00

The Blue Printed Working Plans for this House consist of foundation plan; first and second floor plans; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.





Floor Plan.

Design No. 9046

The arrangement of this House is as follows:

Living Room, 12 feet by 16 feet.

Dining Room, 14 feet by 12 feet 6 inches.

Kitchen, 9 feet 10 inches by 11 feet.

Bedroom, 11 feet 6 inches by 9 feet 6 inches.

Bathroom, 6 feet 6 inches by 6 feet 2 inches.

Pantry and Front Porch.

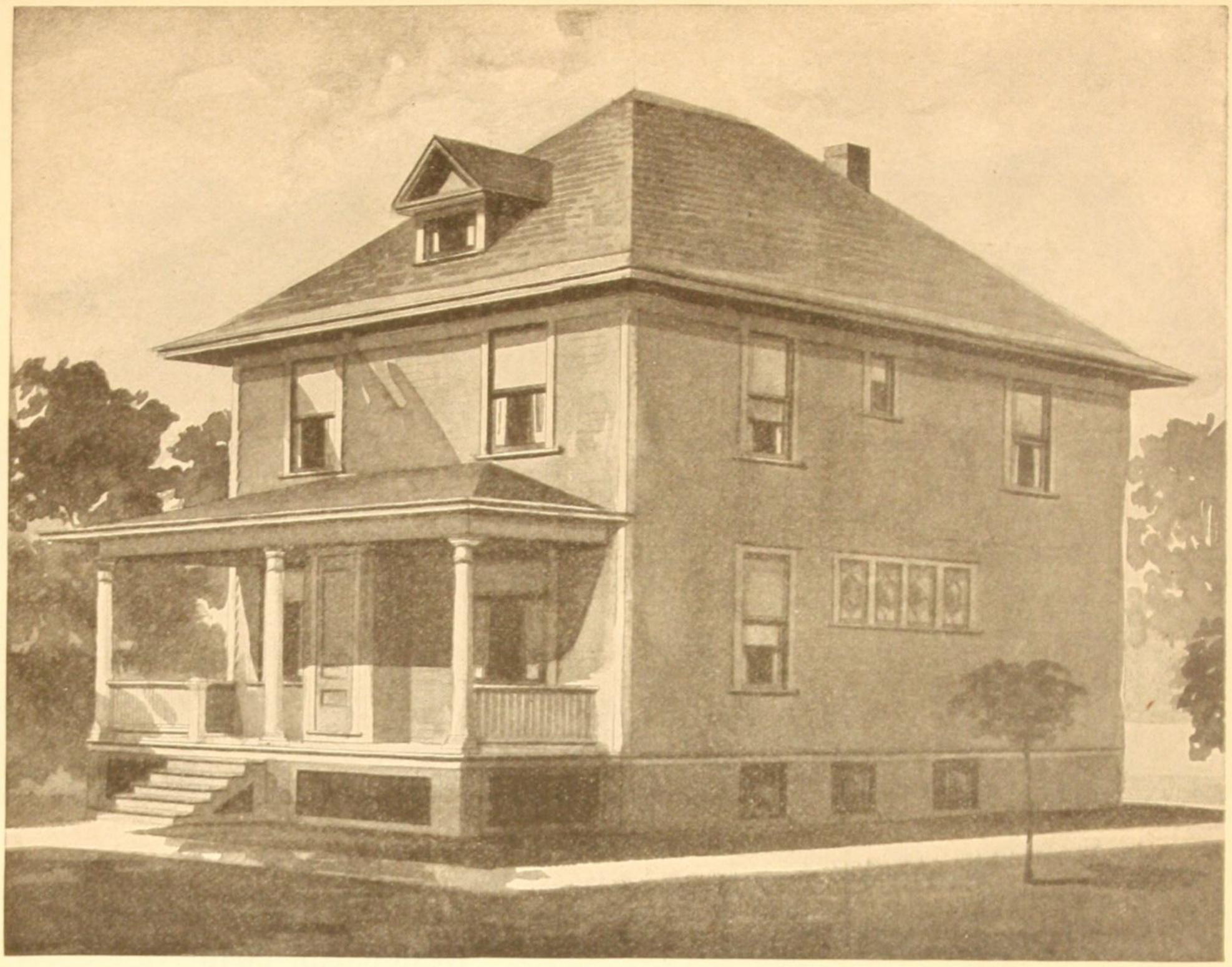
2 Closets.

This Building is 25 feet 6 inches in width; 40 feet in length.

Price of Complete Working Plans and Specifications..... **$12.00**

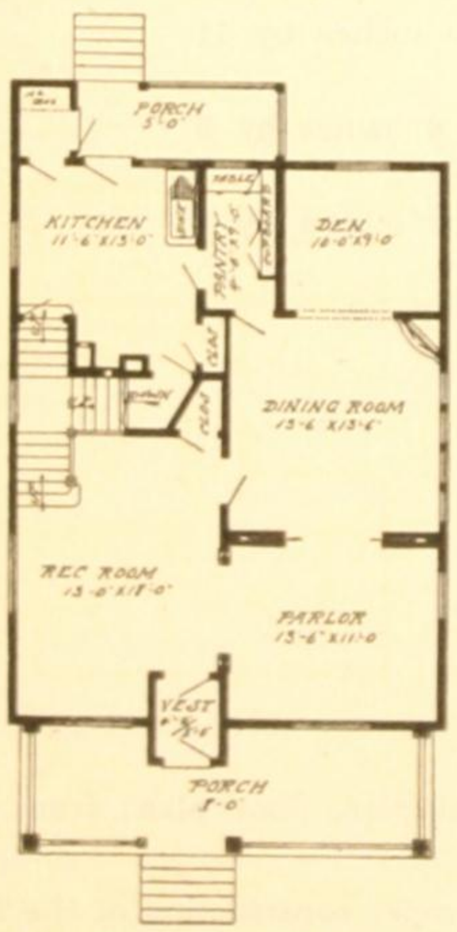
The Blue Printed Working Plans for this House consist of basement plan, roof plan, floor plan; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.



DESIGN NUMBER 6071

Size: width, 28 feet; length, 36 feet, exclusive of porches



First Floor Plan

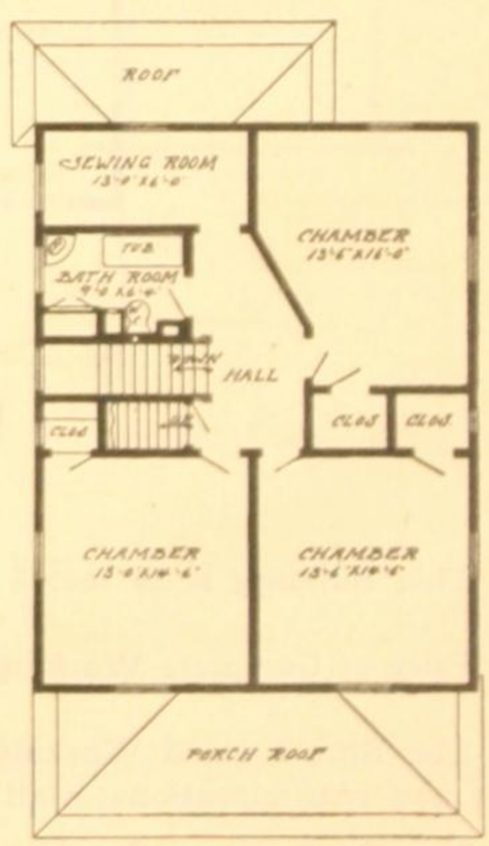
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

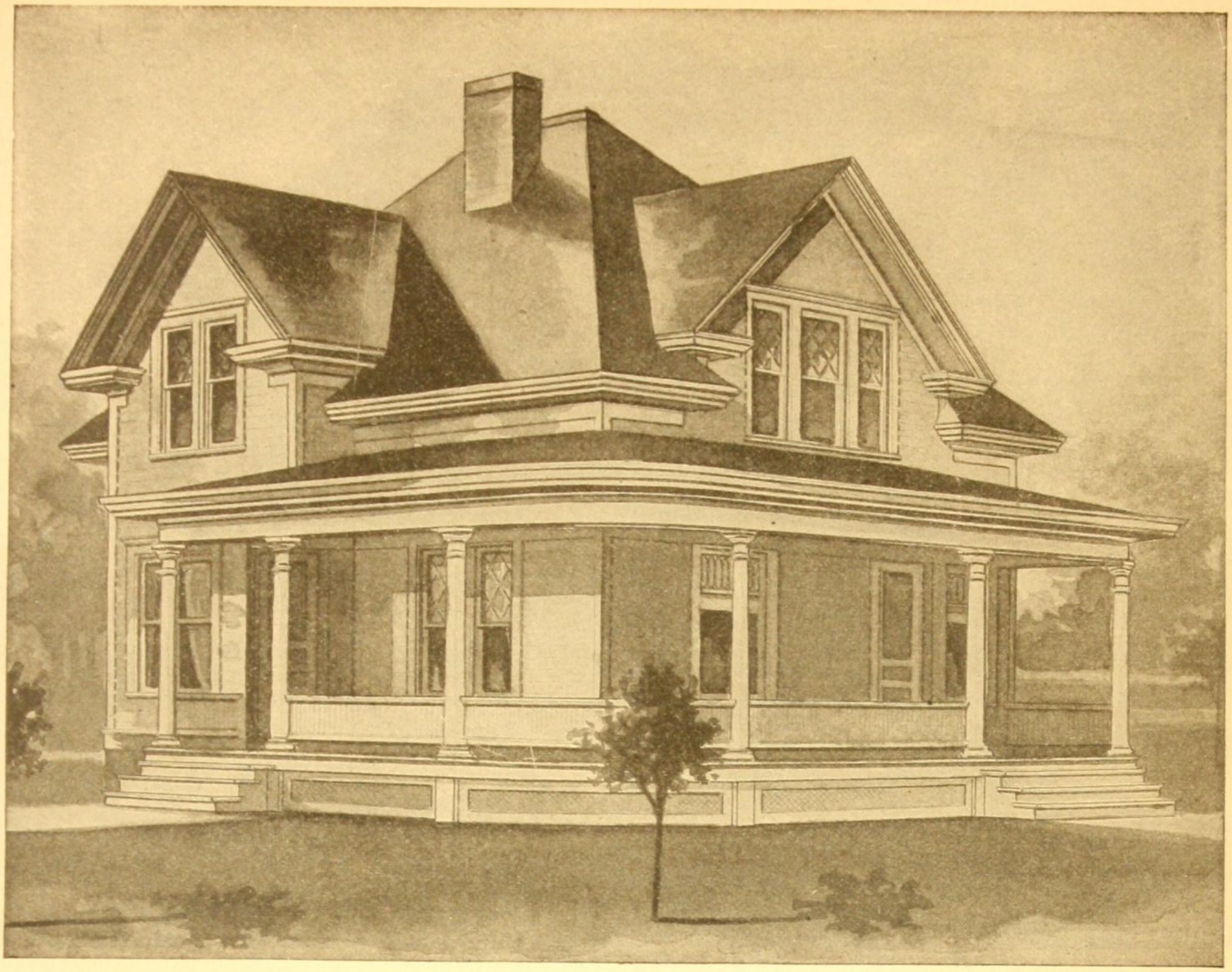
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.

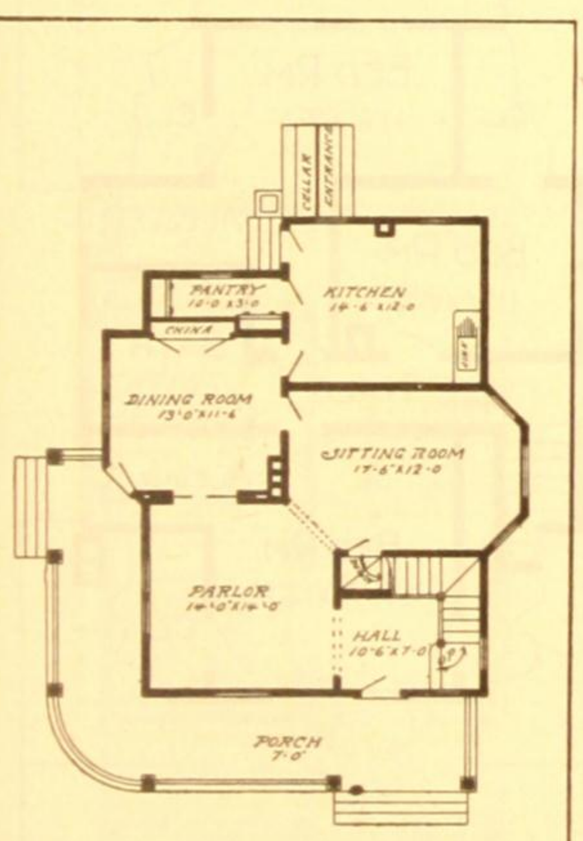


Second Floor Plan



DESIGN NUMBER 6068

Size: width, 32 feet; length, 36 feet, exclusive of porches



First Floor Plan

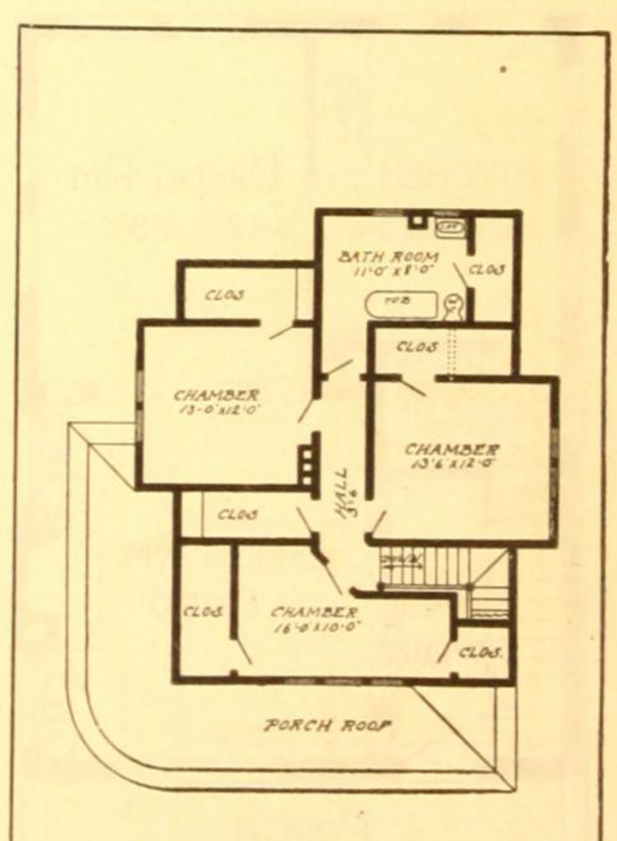
BLUE PRINTS consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

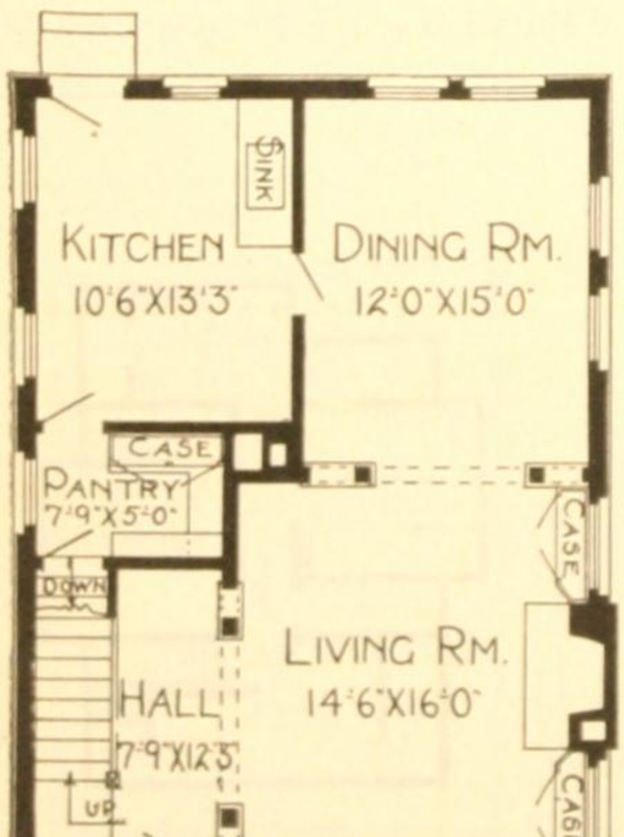
We mail plans and specifications the same day order is received.



Second Floor Plan

Design No. 8306

Size: Width, 24 feet 8 inches; Length, 33 feet 4 inches



First Floor Plan

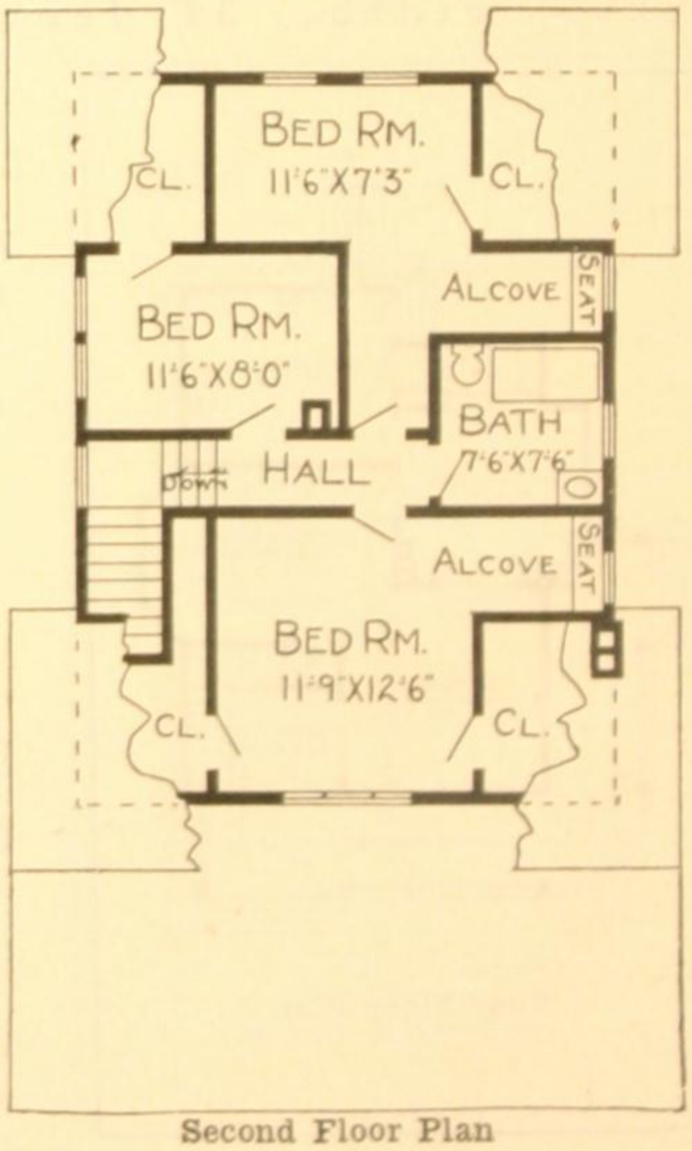
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear and two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

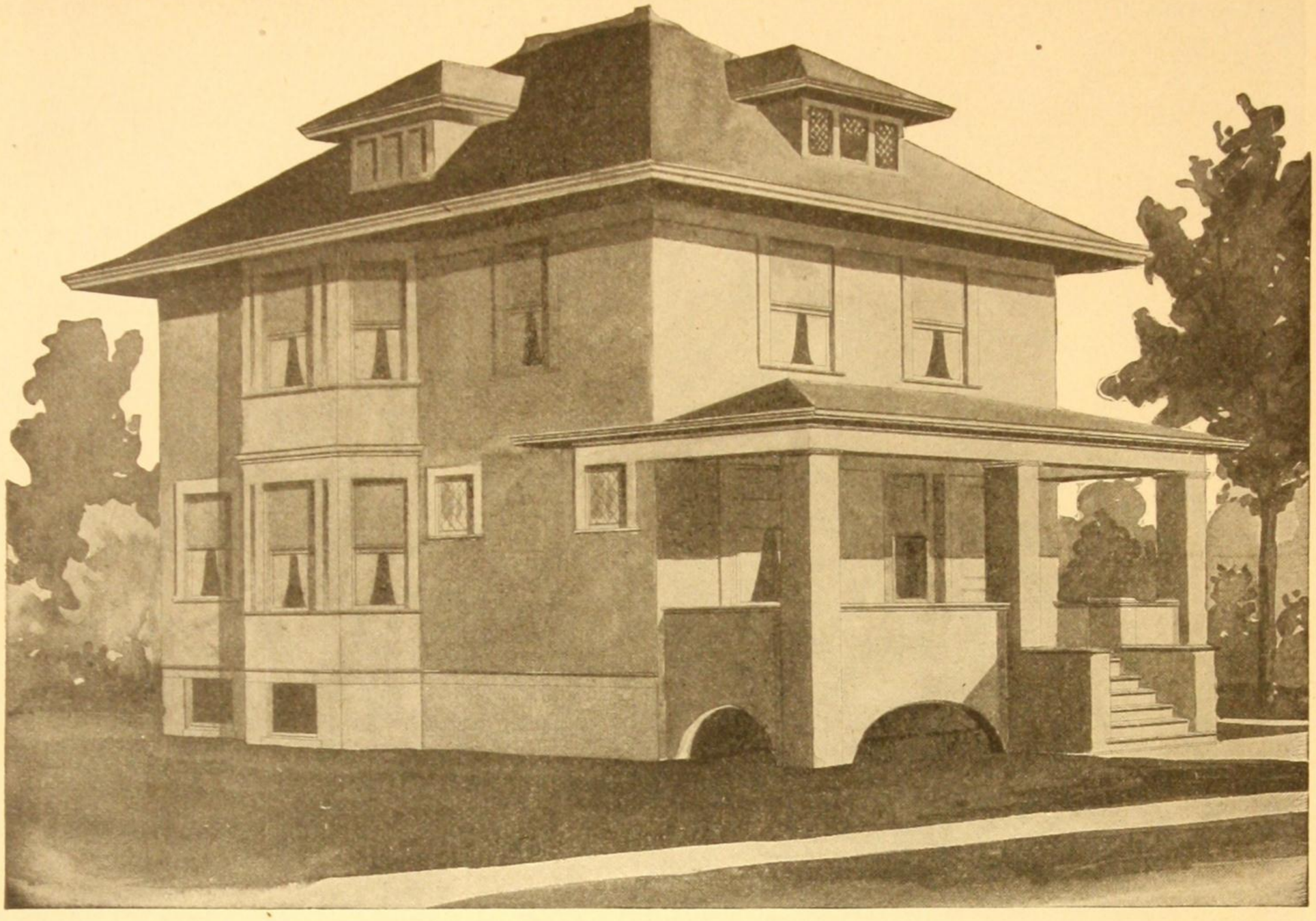
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

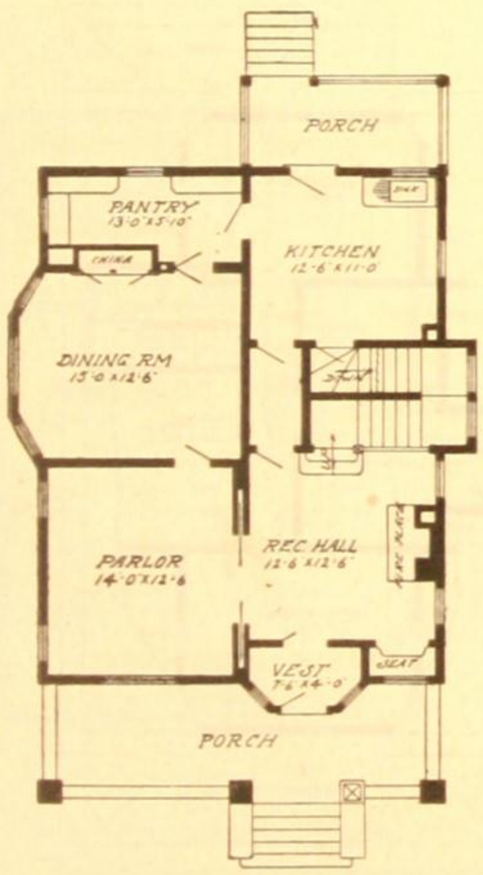


Second Floor Plan



Design No. 8020

Size: Width, 31 feet; Length, 34 feet 6 inches



First Floor Plan

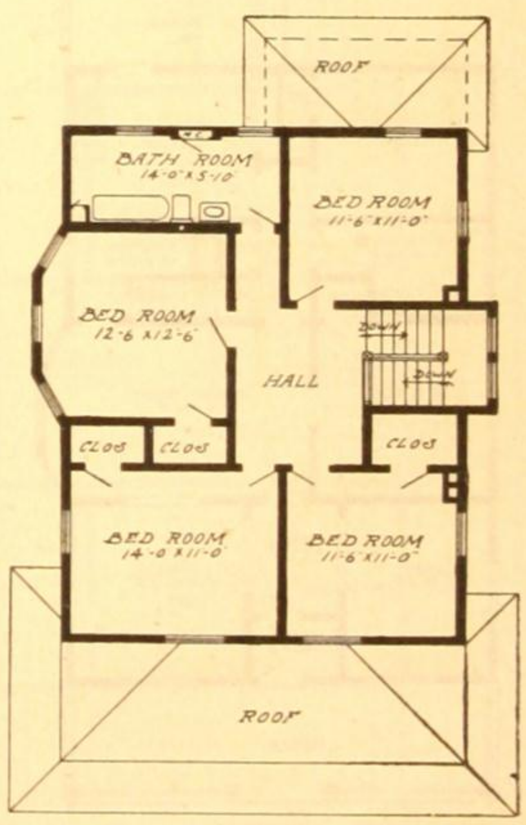
Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

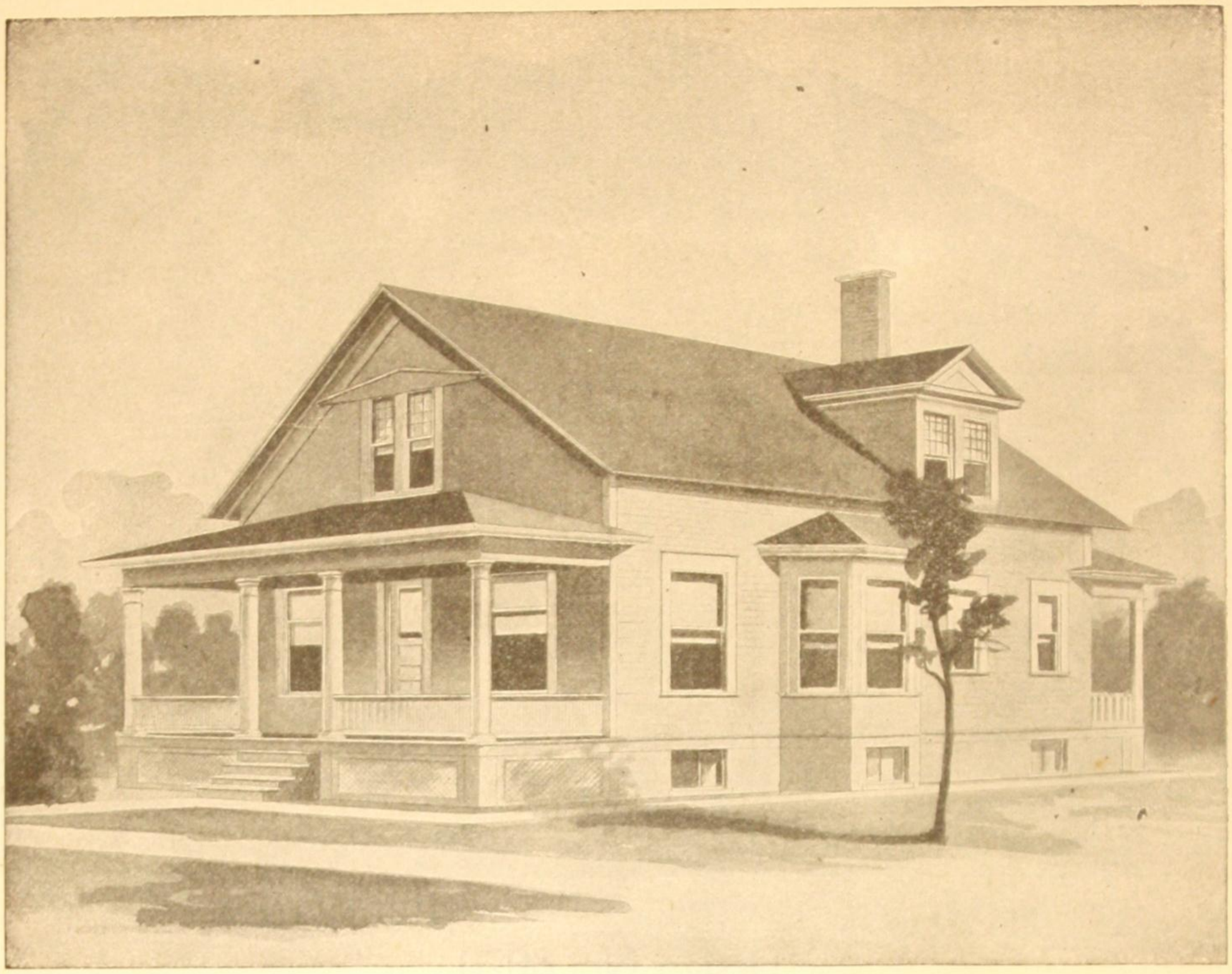
of Blue Prints, together with a complete set of typewritten specifications

ONLY FIFTEEN DOLLARS

We mail Plans and Specifications the same day order is received.

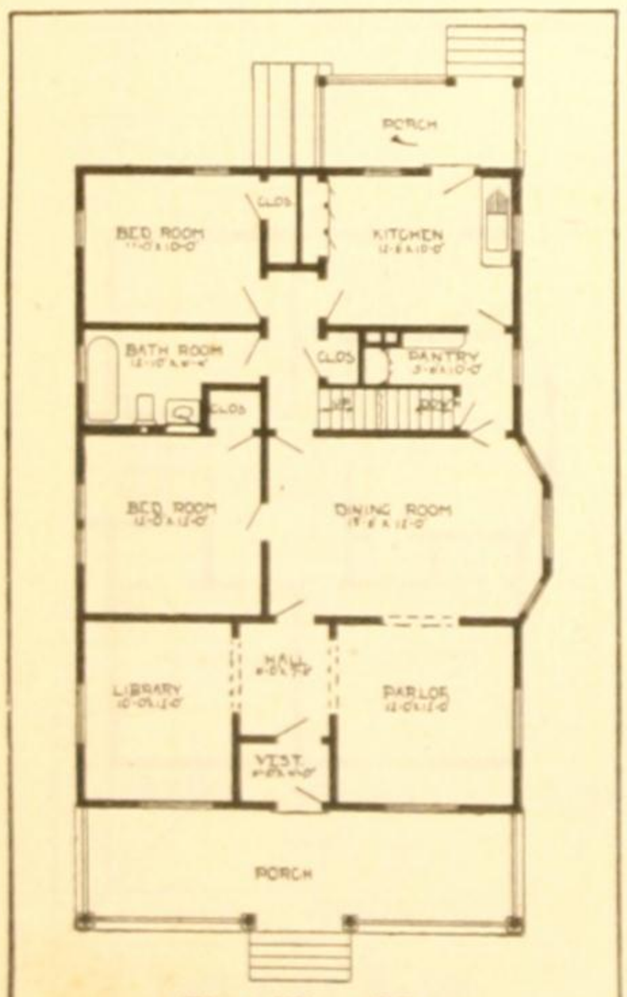


Second Floor Plan



DESIGN NUMBER 6081

Size: width, 32 feet; length, 43 feet, exclusive of porches



First Floor Plan

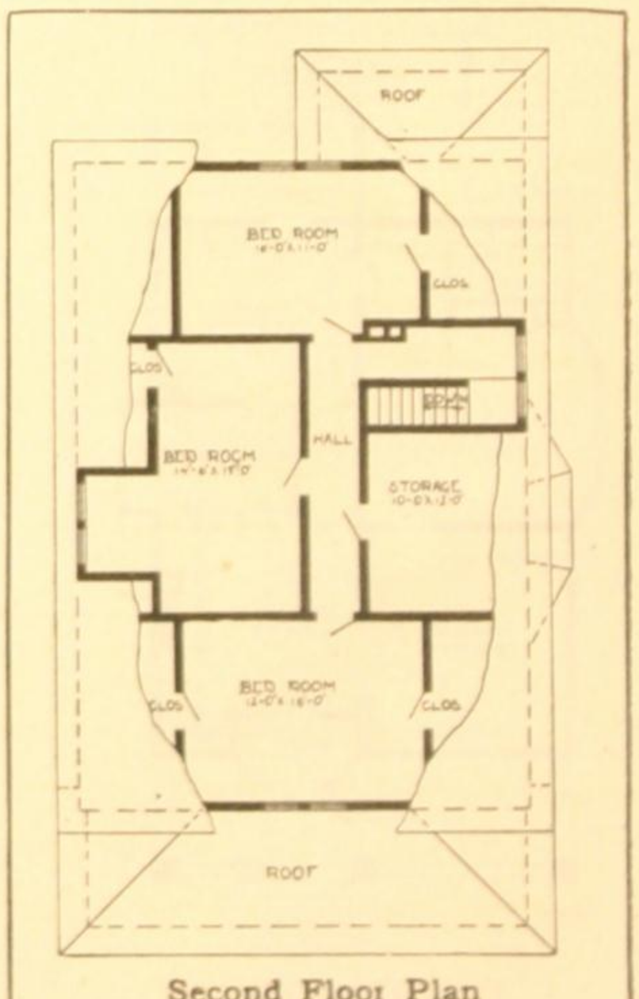
BLUE PRINTS consist of cellar and foundation plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

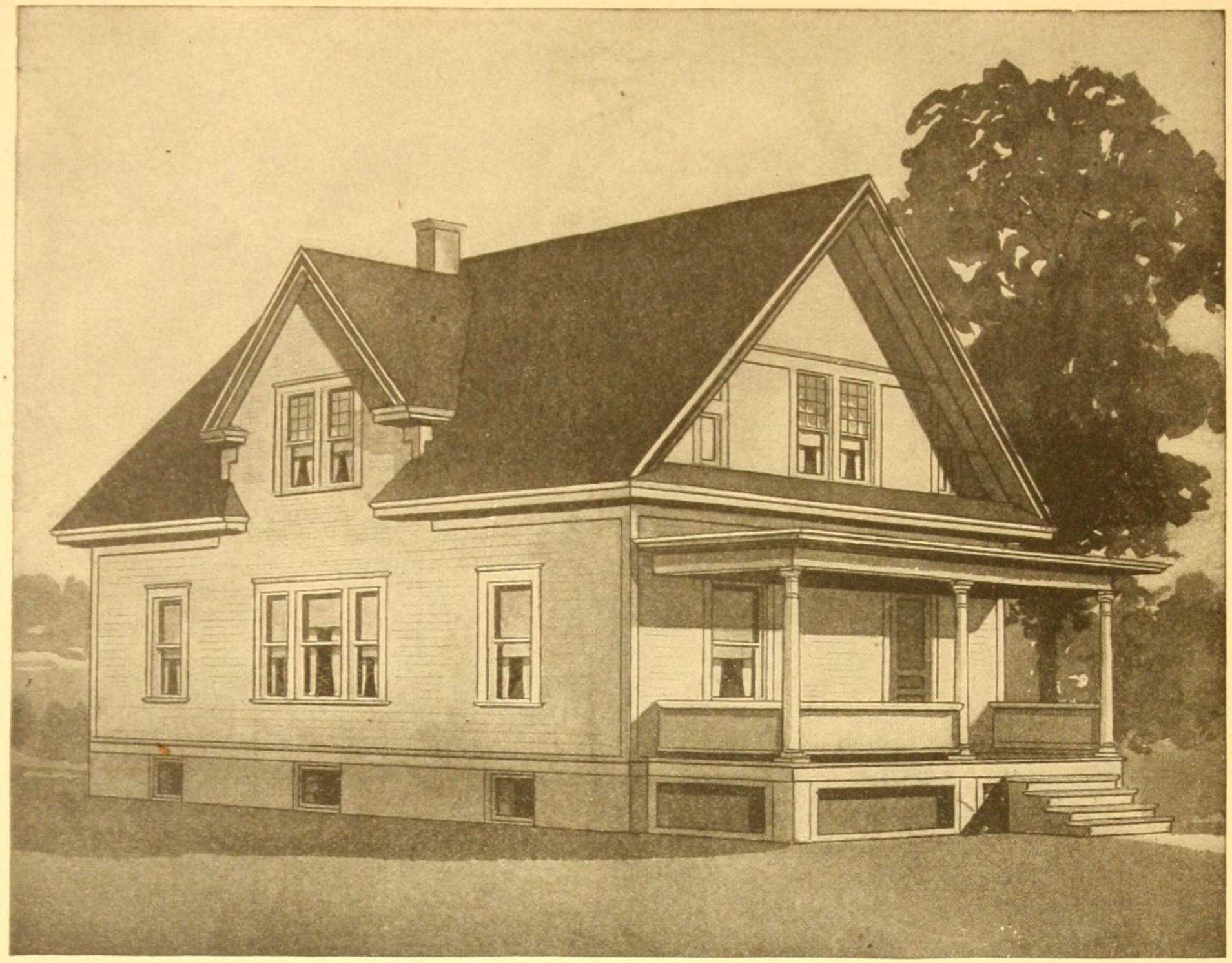
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.

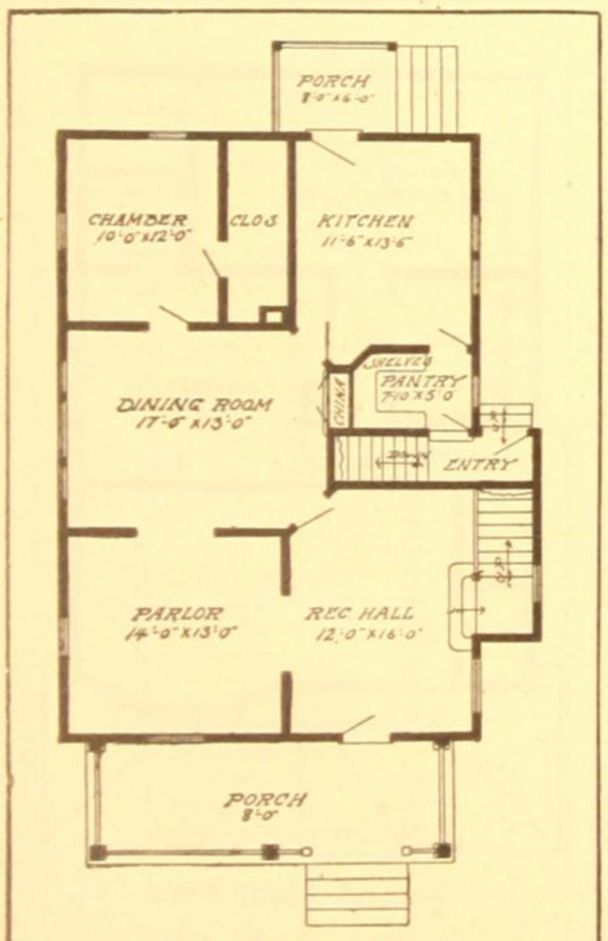


Second Floor Plan



DESIGN NUMBER 6051

Size: width, 31 feet, 6 inches; length, 40 feet, exclusive of porches



First Floor Plan

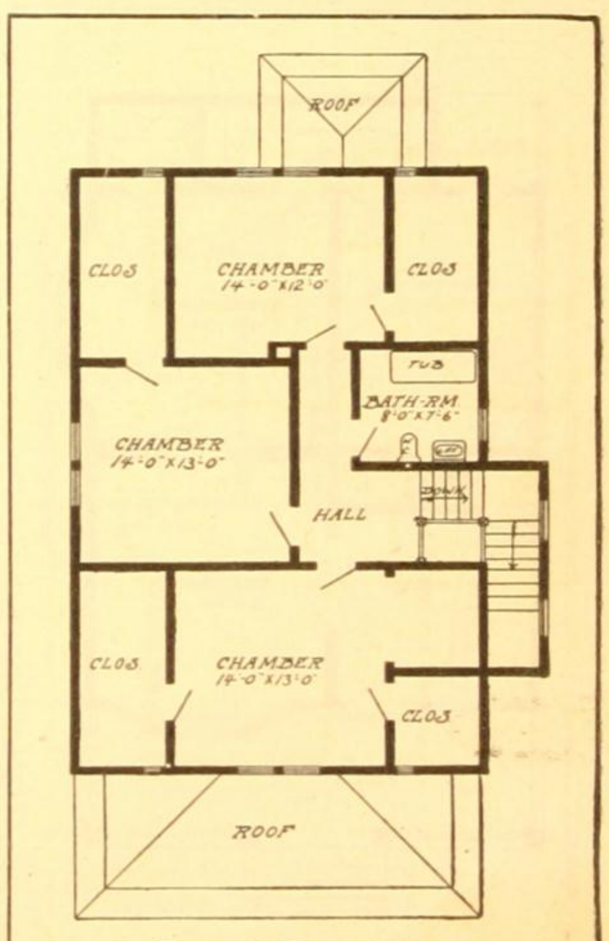
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

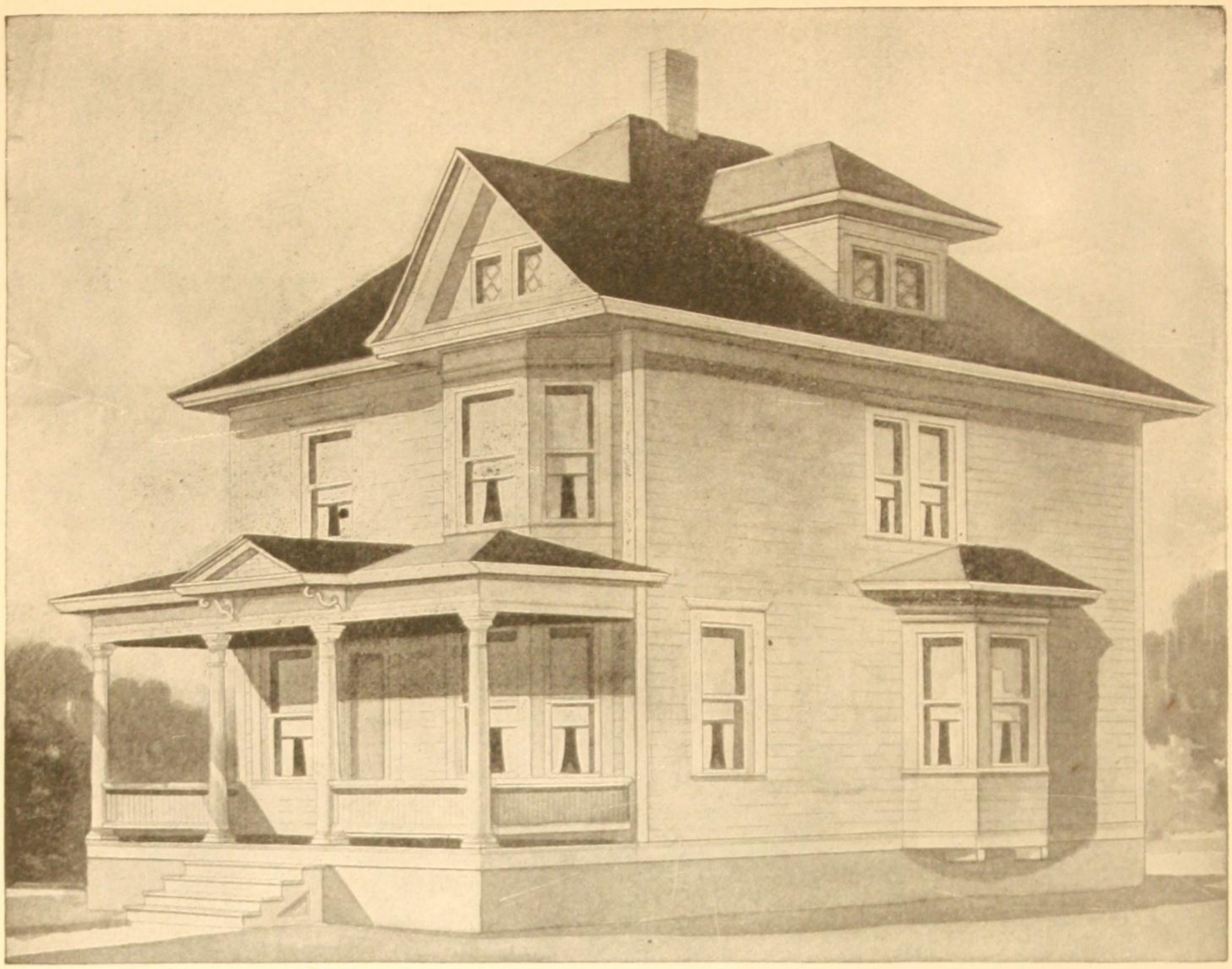
of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.

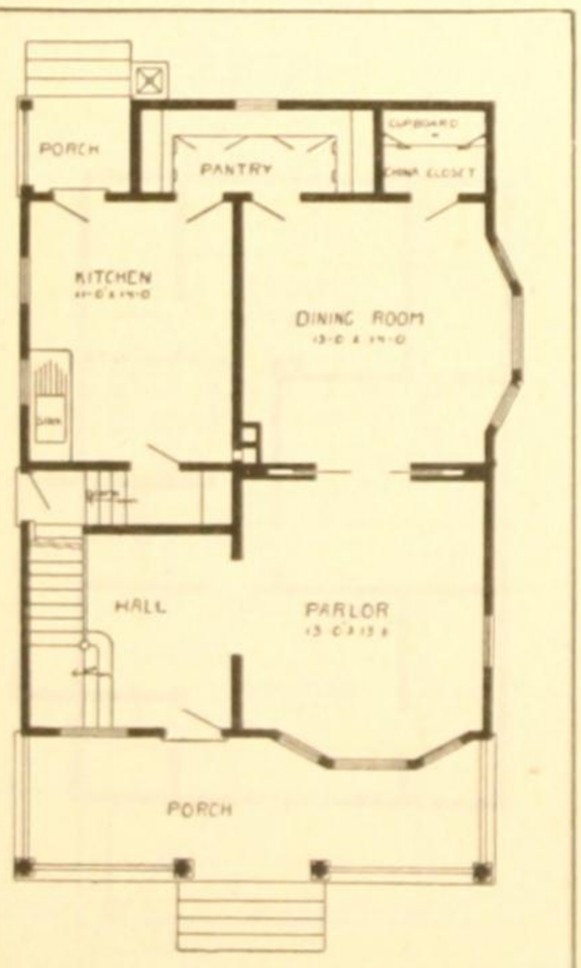


Second Floor Plan



DESIGN NUMBER 6167

Size: width, 25 feet 6 inches; length, 34 feet 6 inches, exclusive of porches



First Floor Plan

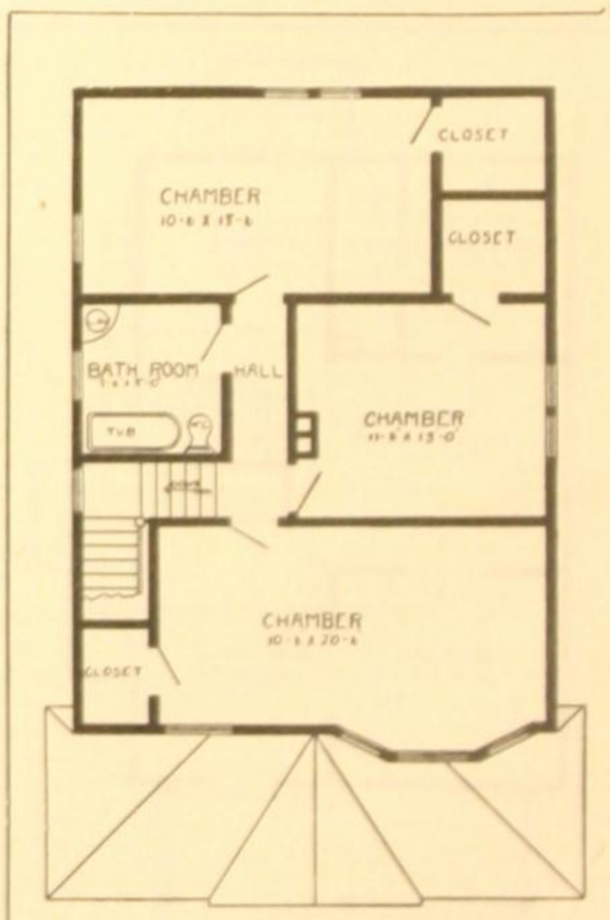
BLUE PRINTS consist of cellar and foundation plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

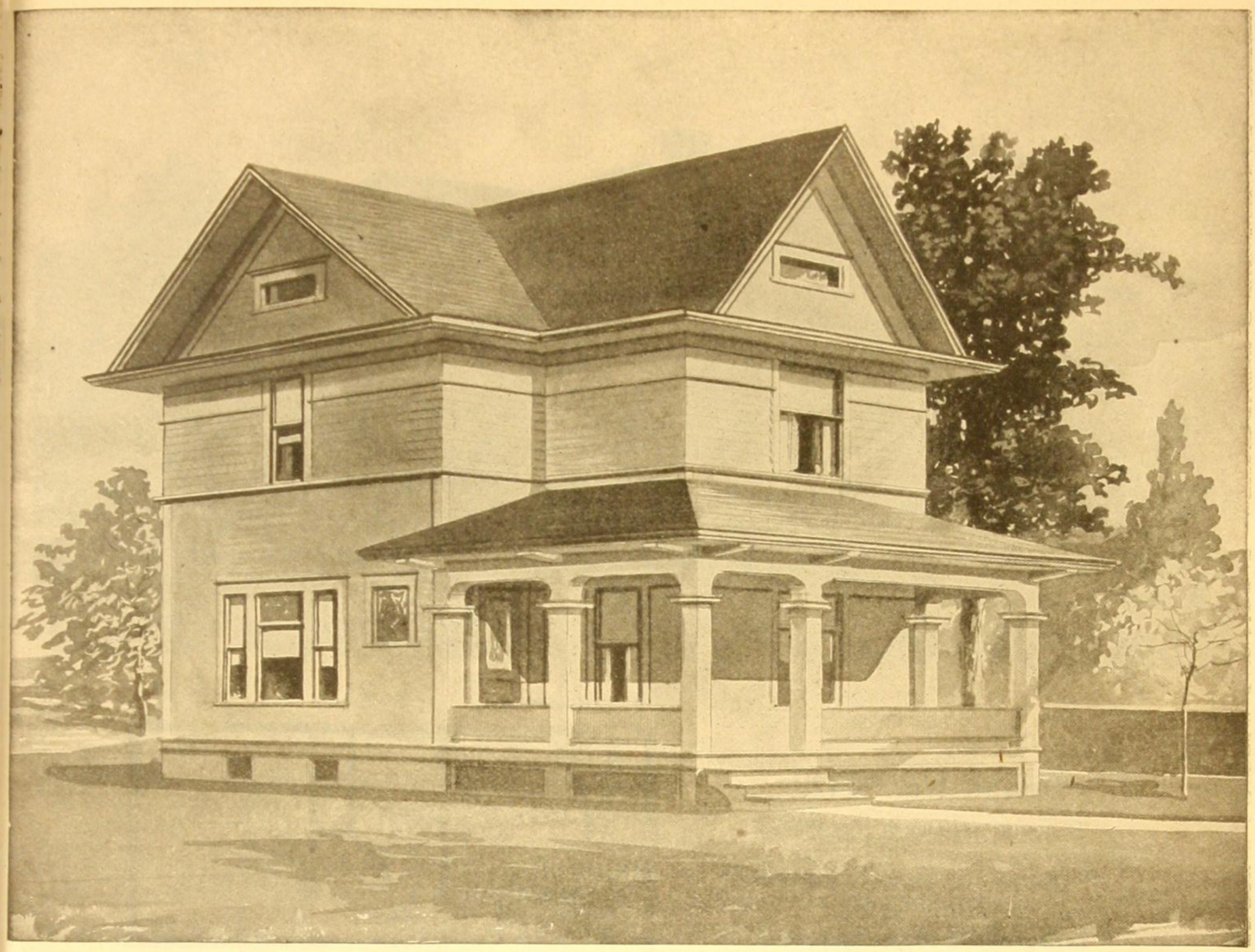
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.

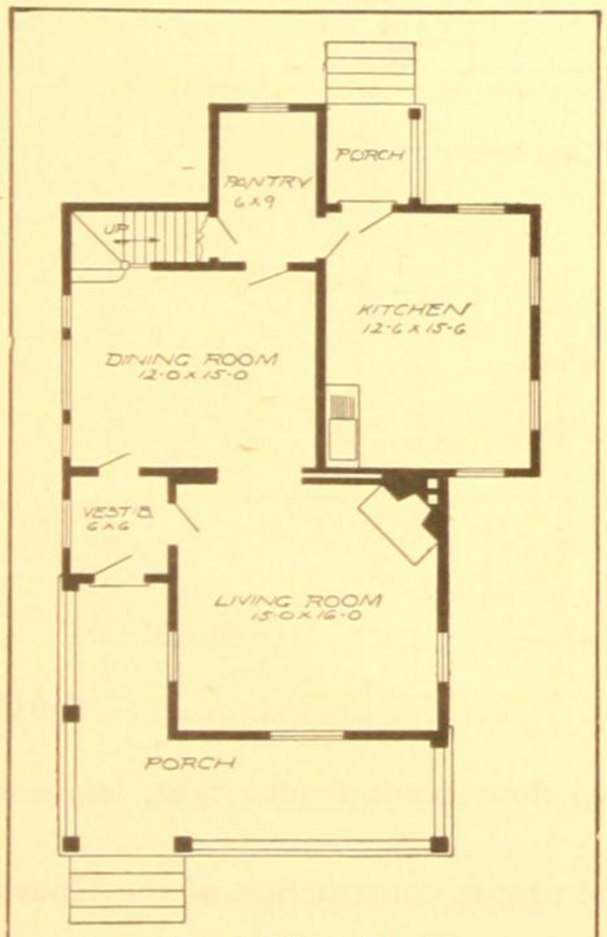


Second Floor Plan



DESIGN NUMBER 6016

Size: Width, 29 feet; length, 38 feet 6 inches exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

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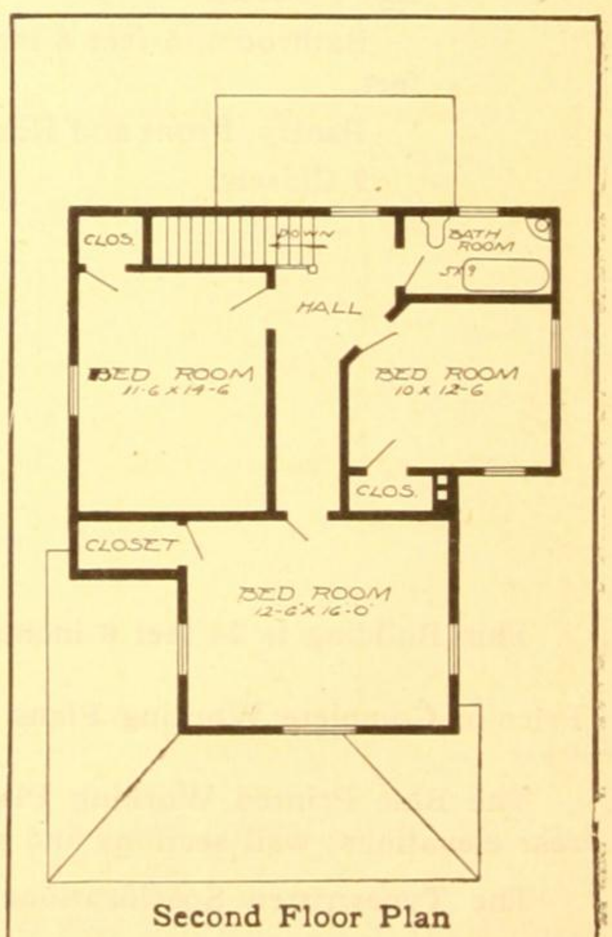
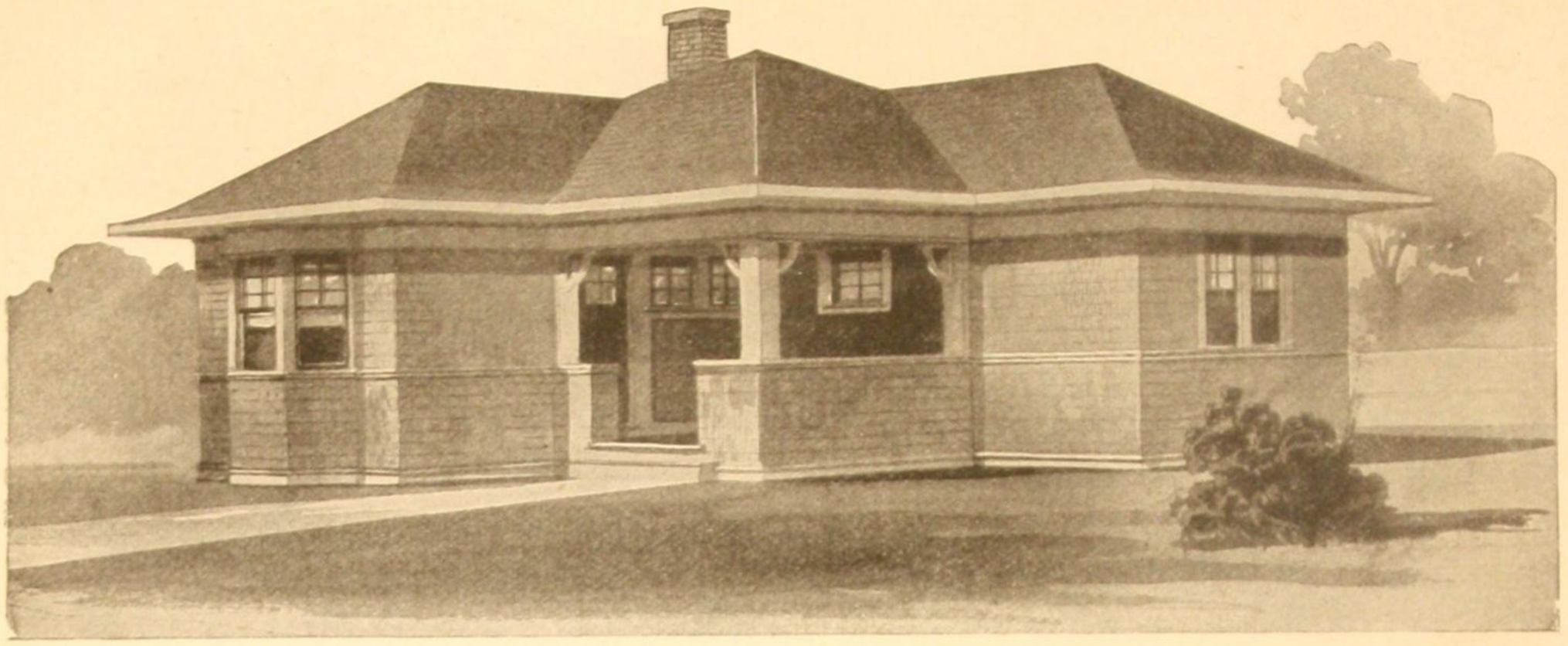


Second Floor Plan



Design No. 9042

The arrangement of this House is as follows:

FLOOR PLAN.

Living Room, 13 feet by 12 feet.

Dining Room, 13 feet by 10 feet 6 inches.

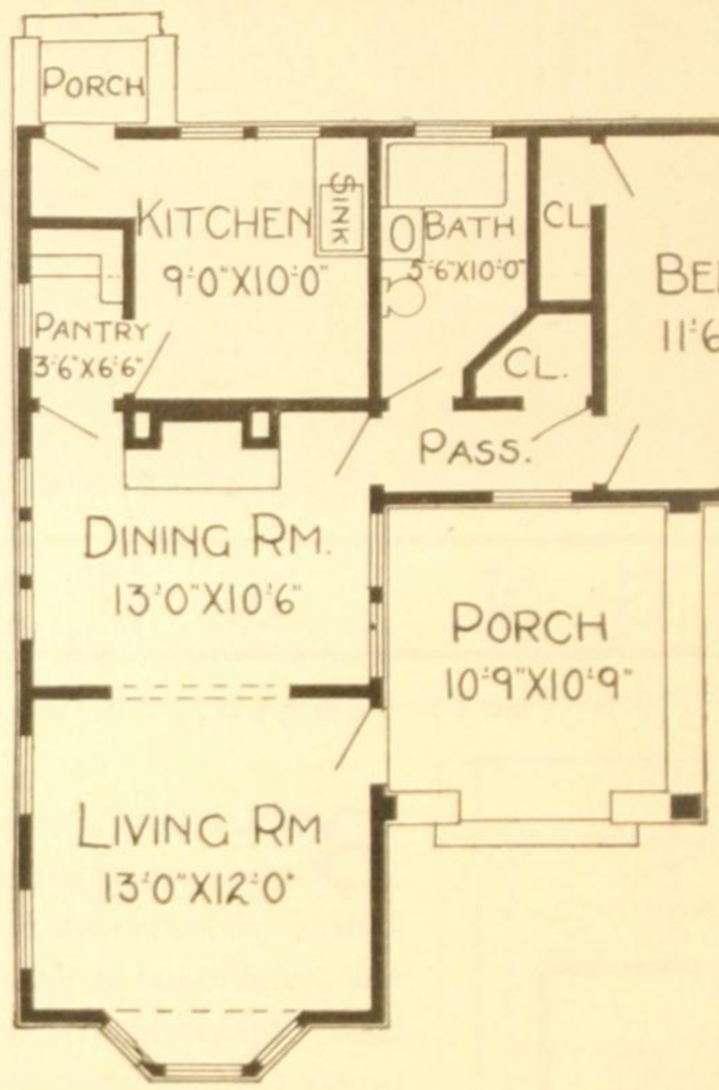
Kitchen, 9 feet by 10 feet,

Bedroom, 11 feet 6 inches by 13 feet 6 inches.

Bathroom, 5 feet 6 inches by 10 feet.

Pantry, Front and Rear Porches.

2 Closets.



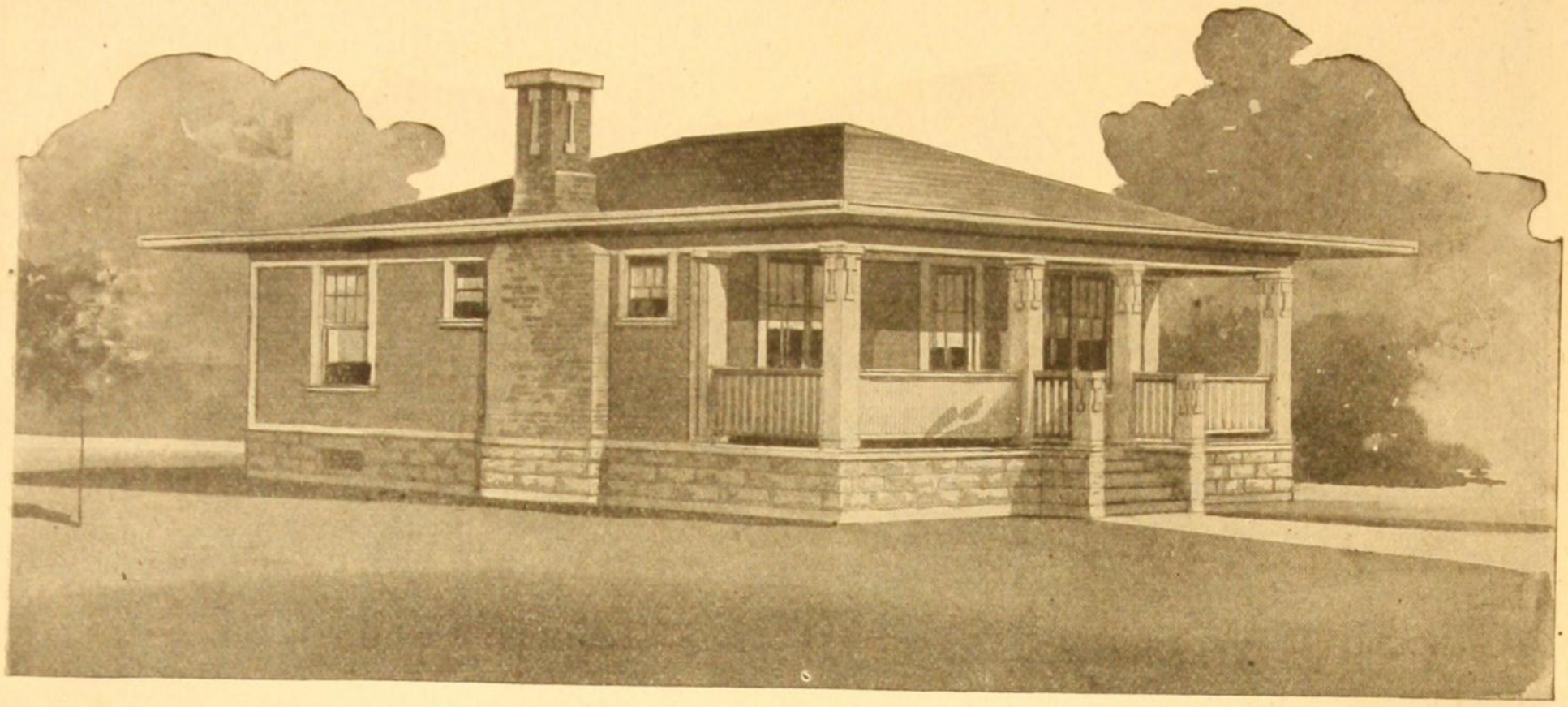
Floor Plan.

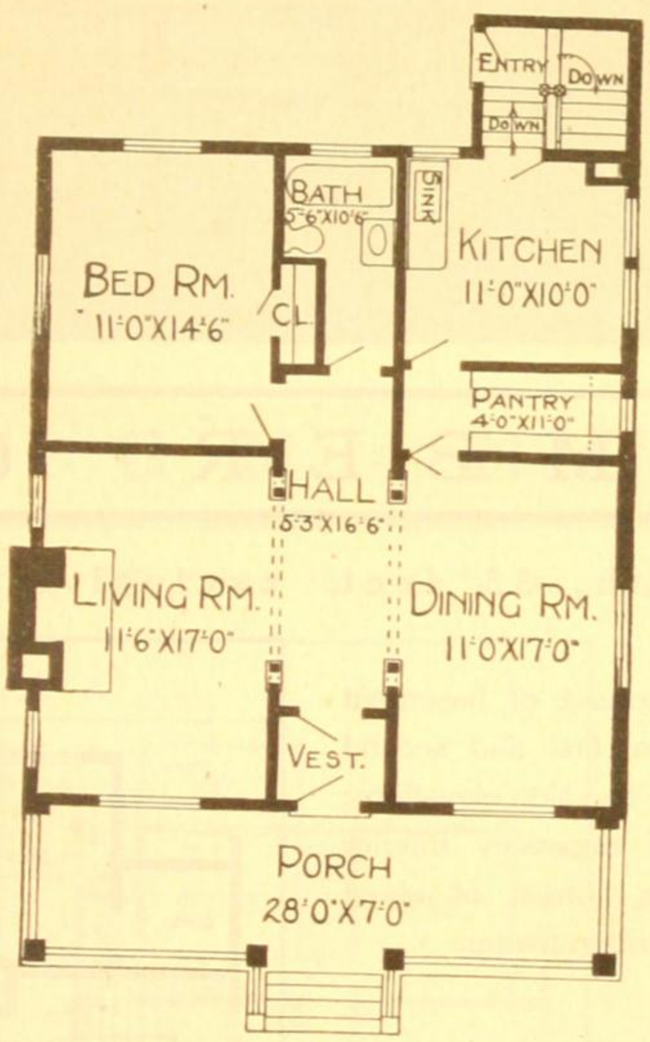
This Building is 34 feet 6 inches in width; 36 feet 6 inches in length.

Price of Complete Working Plans and Specifications $10.00

The Blue Printed Working Plans for this House consist of foundation plan; floor plan; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.





Floor Plan.

Design No. 9065

The arrangement of this House is as follows:

FLOOR PLAN.

Living Room, 11 feet 6 inches by 17 feet.

Dining Room, 11 feet by 17 feet.

Kitchen, 11 feet by 10 feet.

Bedroom, 11 feet by 14 feet 6 inches.

Bathroom, 5 feet 6 inches by 10 feet 6 inches.

Pantry and Front Porch.

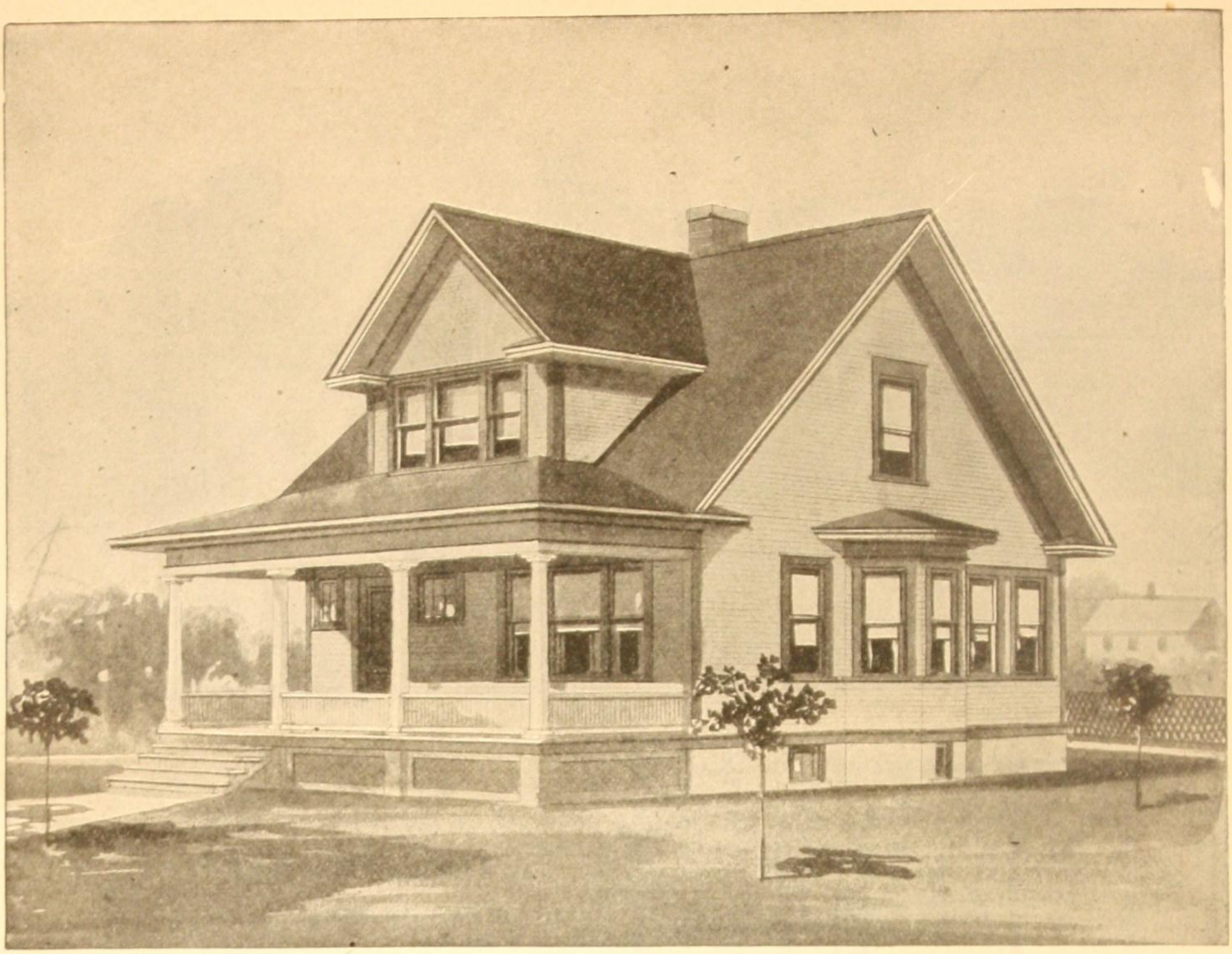
1 Closet.

This Building is 30 feet in width; 33 feet in length.

Price of Complete Working Plans and Specifications **$10.00**

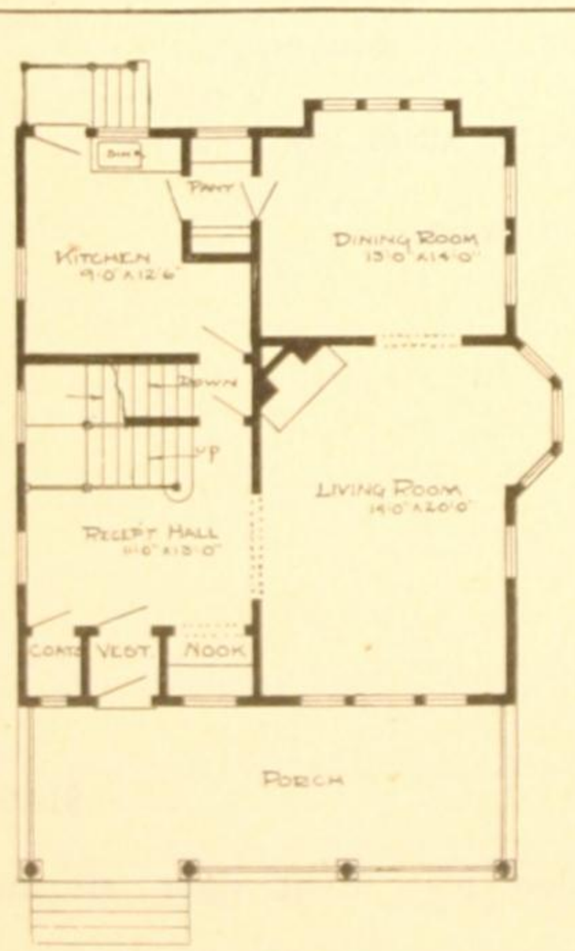
The Blue Printed Working Plans for this House consist of basement plan; floor plan; front, right, left and rear elevations; wall sections and all necessary details.

The Typewritten Specifications contain all the necessary information for the proper construction of the House.



DESIGN NUMBER 6011

Size: width, 28 feet 6 inches; length, 33 feet, exclusive of porches



First Floor Plan

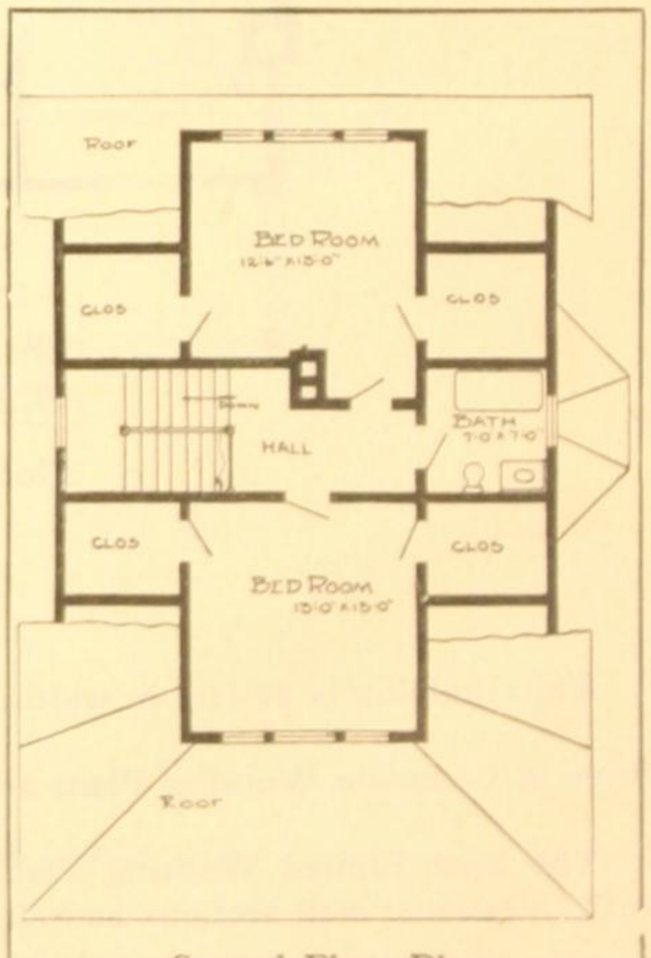
BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

PRICE

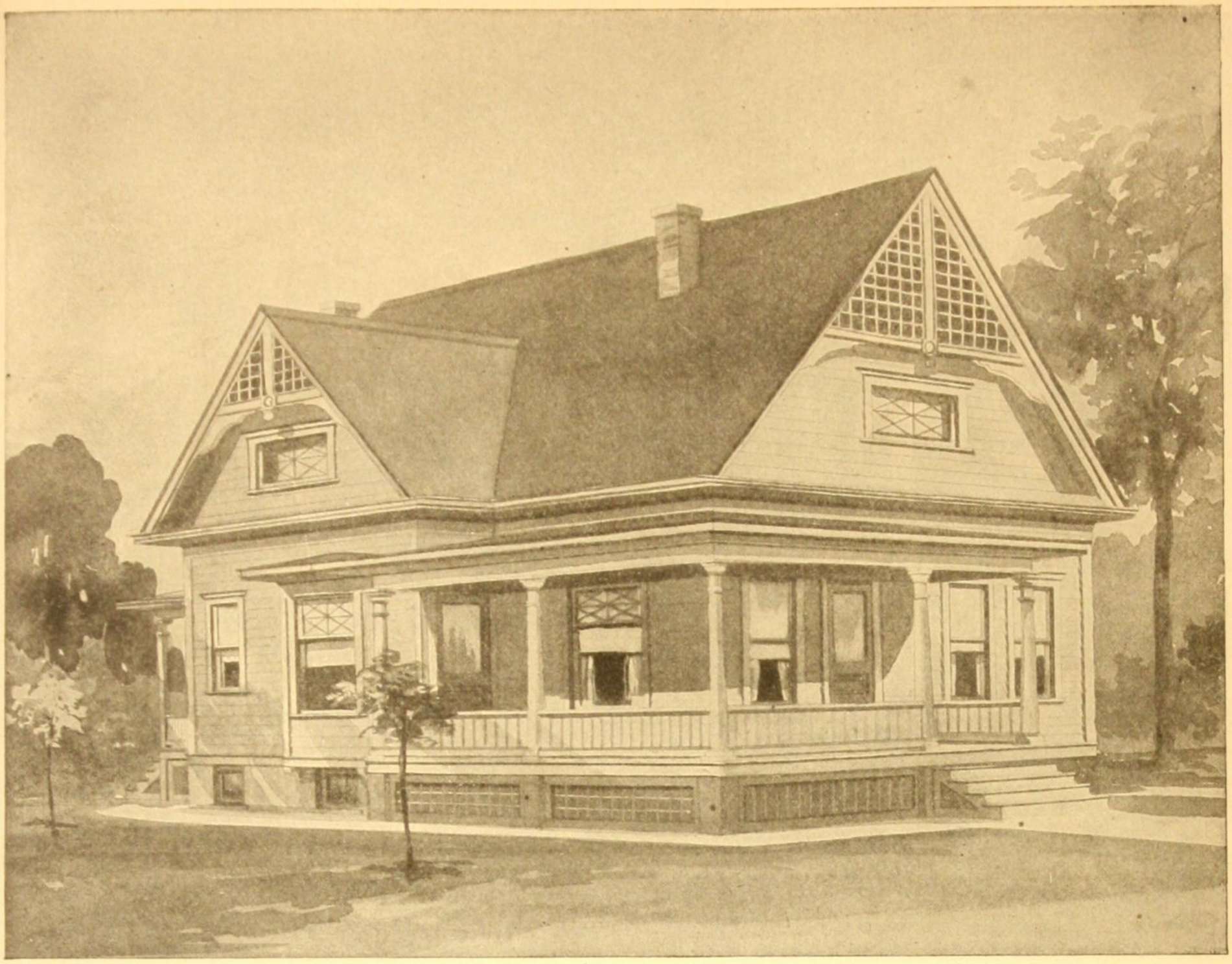
of Blue Prints, together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail plans and specifications the same day order is received.

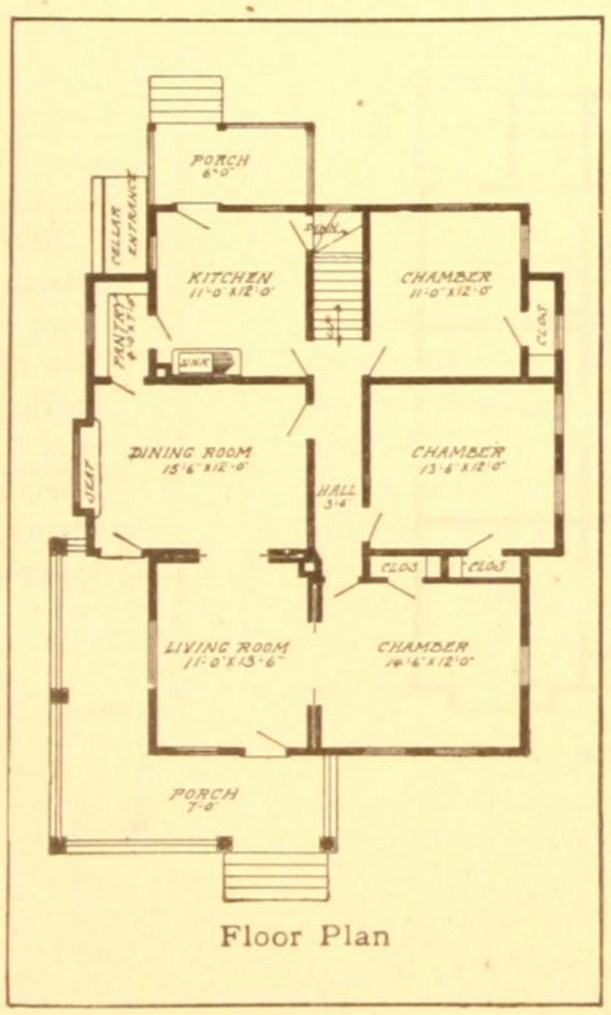


Second Floor Plan



DESIGN NUMBER 6041

Size: Width, 35 feet 6 inches; Length, 40 feet, exclusive of porches



Floor Plan

BLUE PRINTS consist of basement plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

PRICE

of Blue Prints, together with a complete set of typewritten specifications

ONLY TEN DOLLARS

We mail plans and specifications the same day order is received.

Design No. 7083

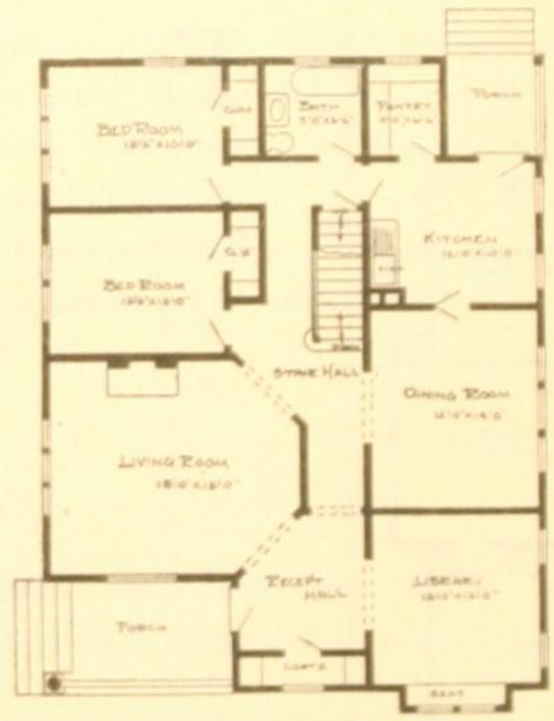
Size: Width, 36 feet; Length, 45 feet, exclusive of porch

PRICE

of Blue Prints, together with a complete set of typewritten specifications ,

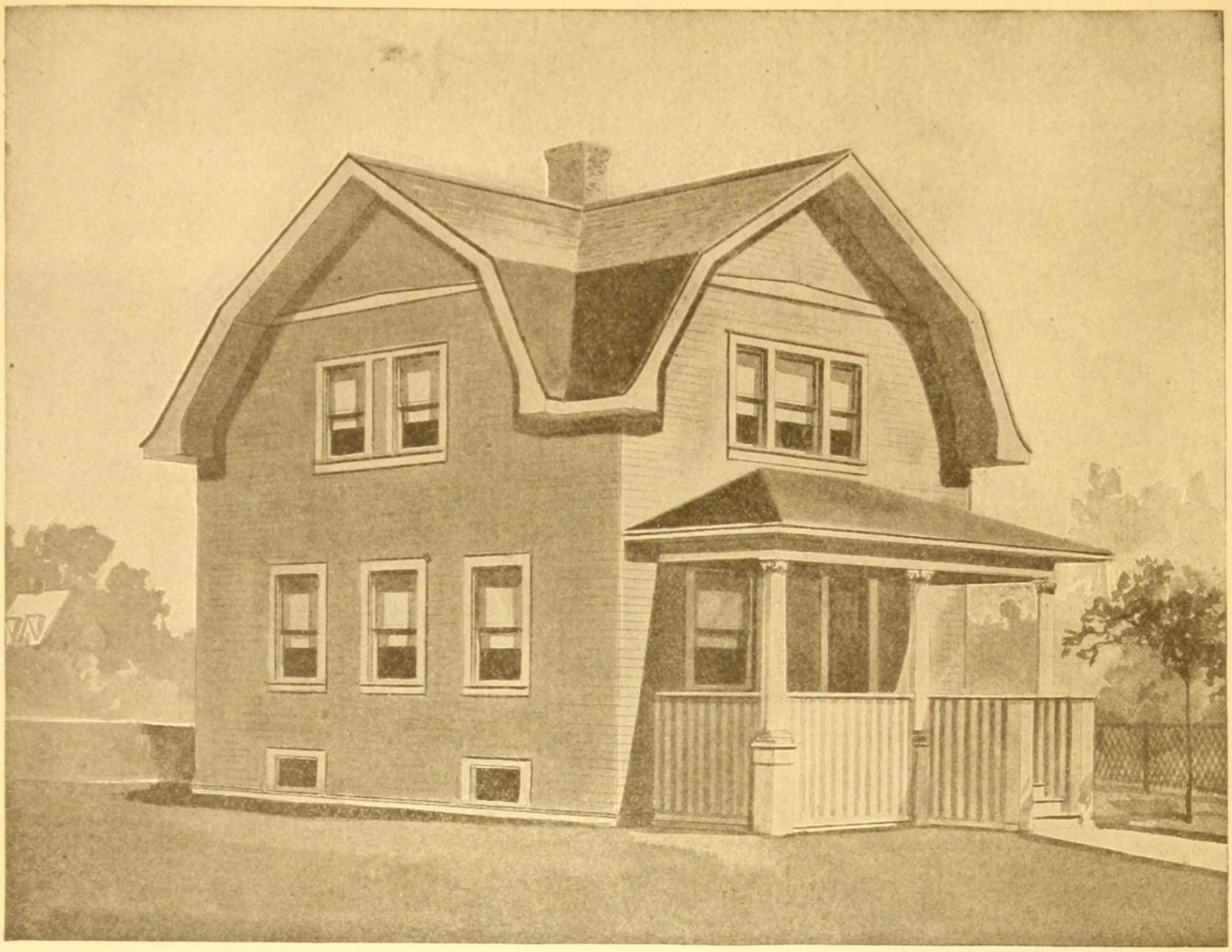
ONLY TEN DOLLARS

We mail Plans and Specifications the same day order is received.



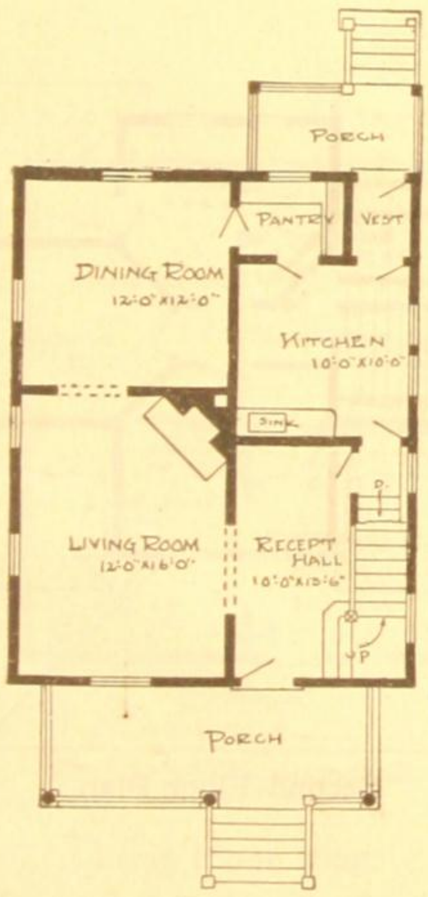
Floor Plan

Blue prints consist of basement plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.



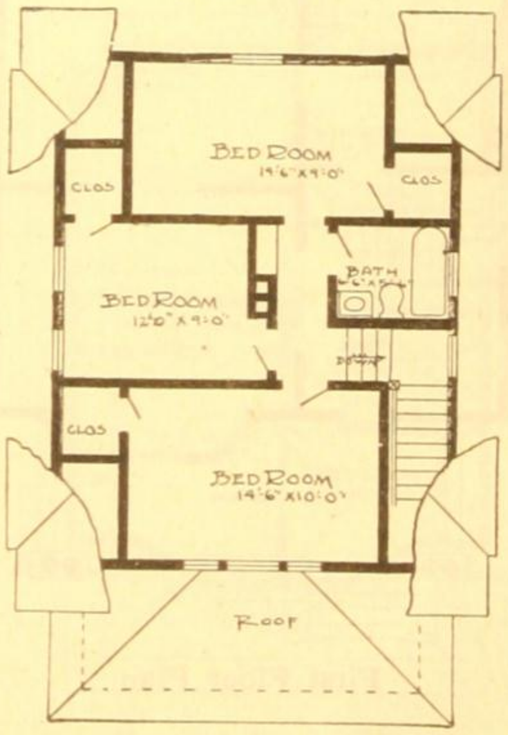
Design No. 7086

Size: Width, 23 feet 6 inches; Length, 29 feet 6 inches, exclusive of porches



First Floor Plan

Blue prints consist of basement plan; first and second floor plans; front, rear, and two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



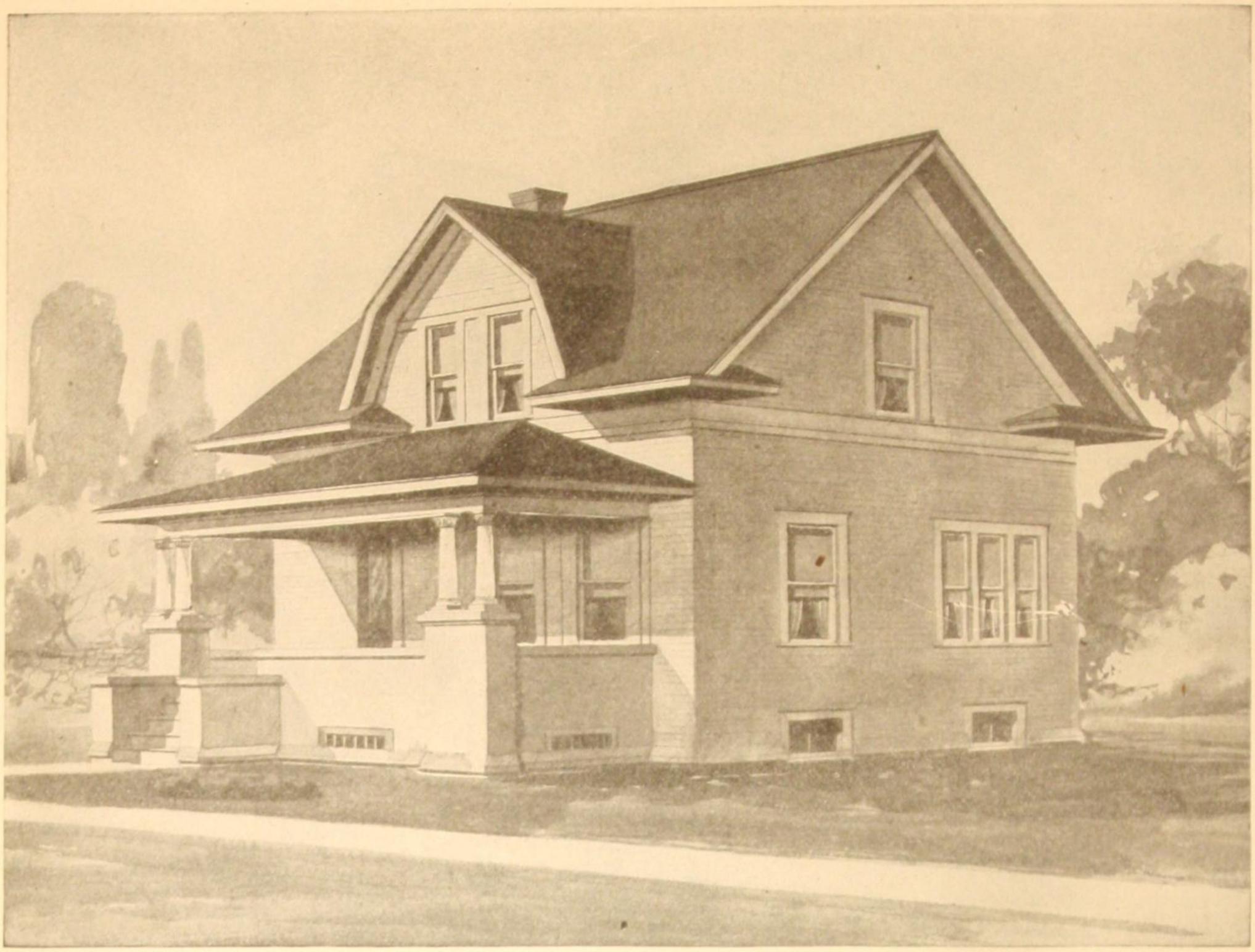
Second Floor Plan

PRICE

of Blue Prints together with a complete set of typewritten specifications

ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.



Design No. 7066

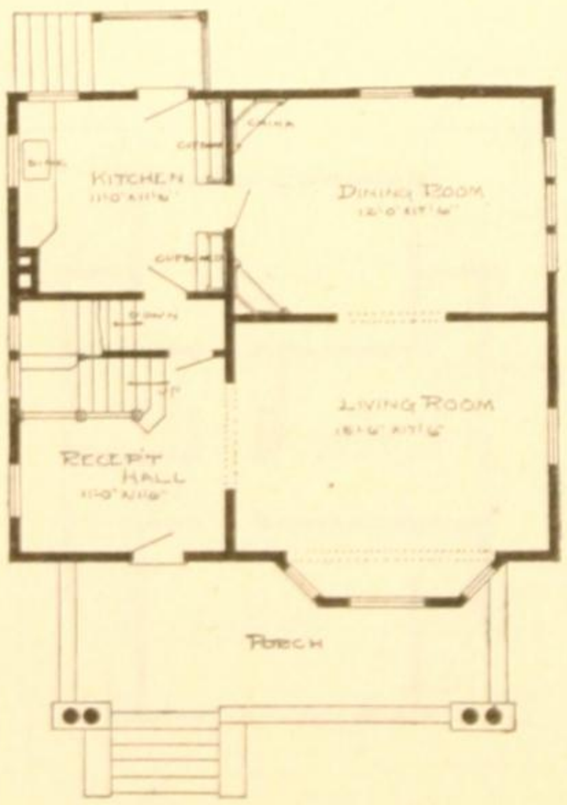
Size: Width, 30 feet 6 inches; Length, 29 feet, exclusive of porches

PRICE

of Blue Prints, together with a complete set of typewritten specifications

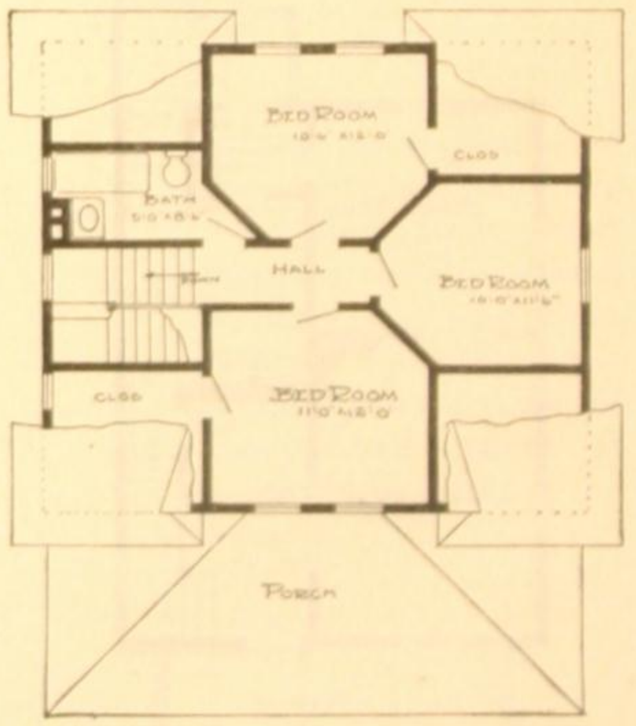
ONLY TWELVE DOLLARS

We mail Plans and Specifications the same day order is received.

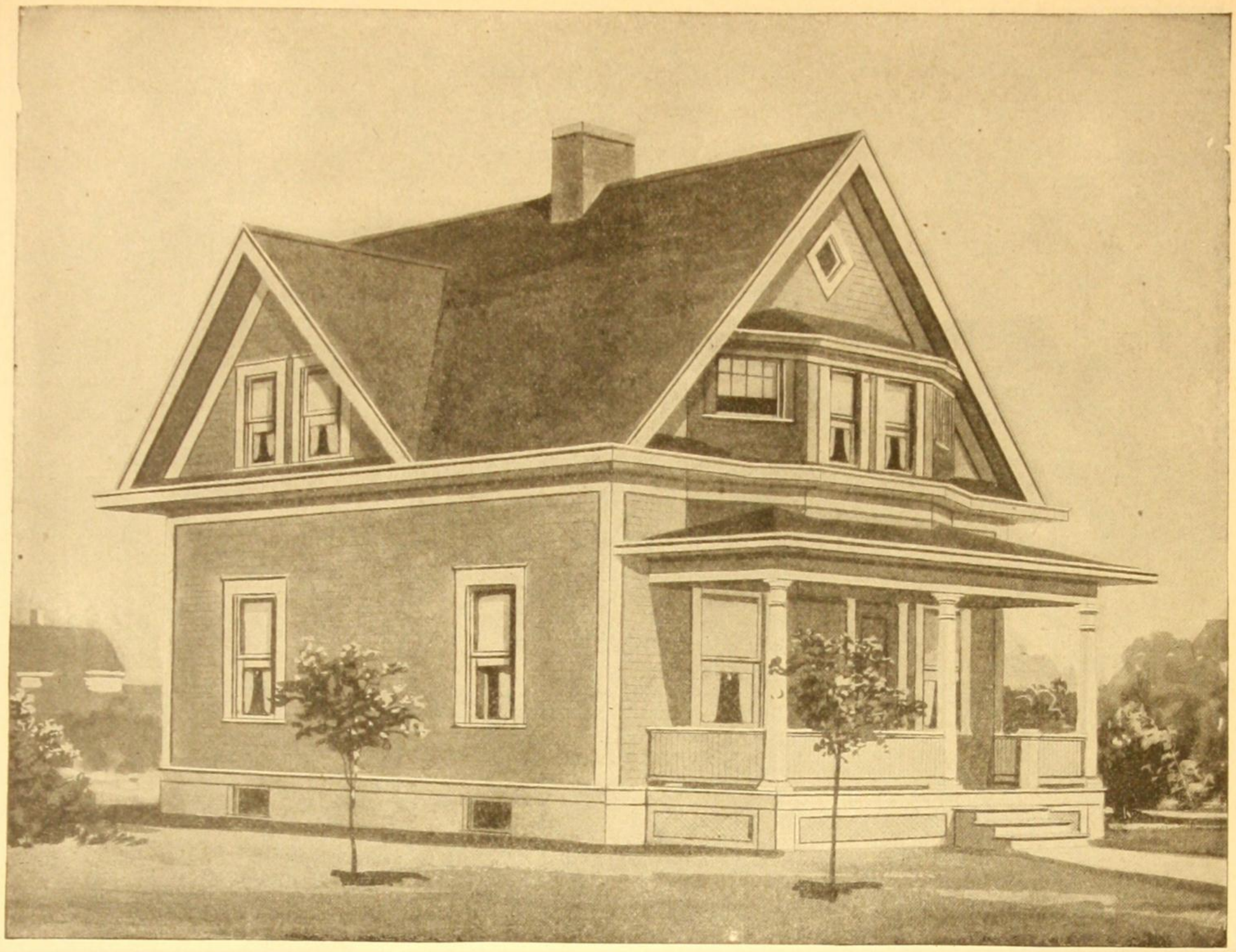


First Floor Plan

Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

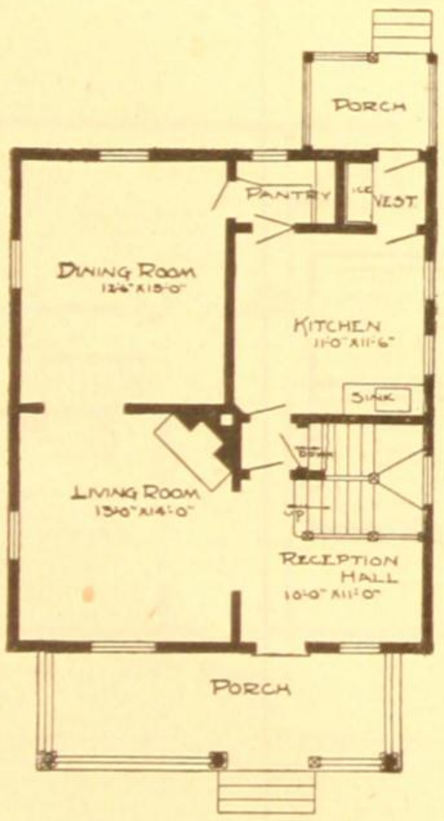


Second Floor Plan



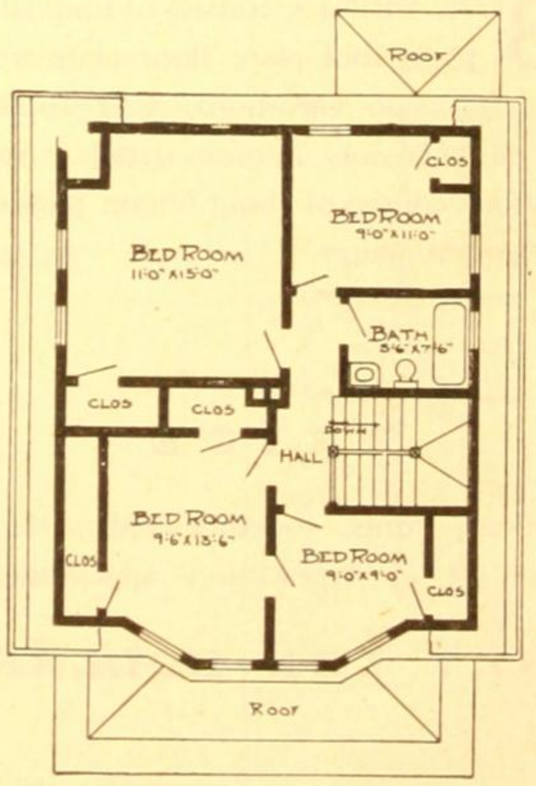
Design No. 7047

Size: Width, 25 feet 6 inches; Length, 30 feet 6 inches, exclusive of porches



First Floor Plan.

Blue prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.



Second Floor Plan.

PRICE

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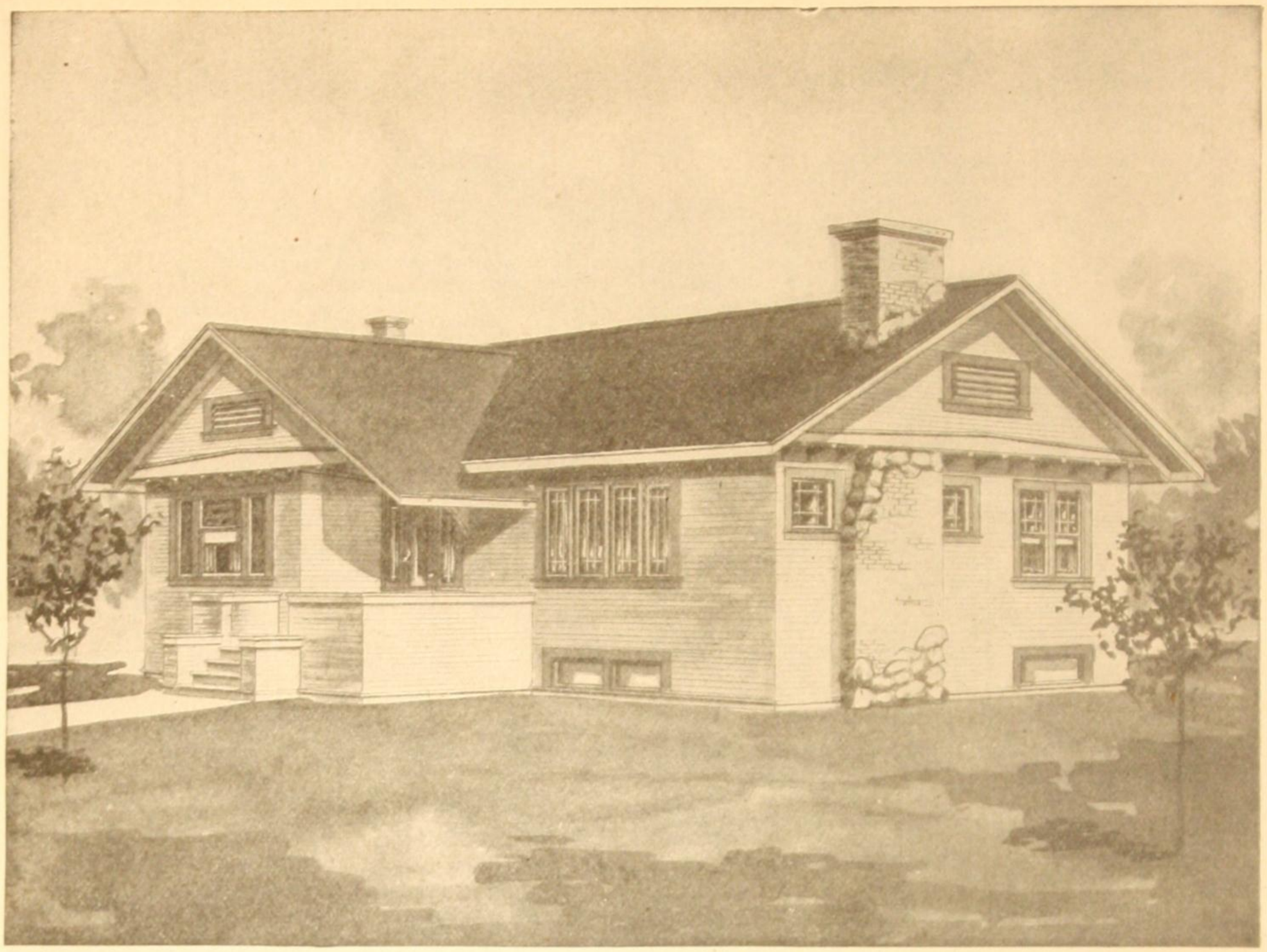

DESIGN NUMBER 6073

Size: Width, 46 feet 6 inches; Length, 31 feet 6 inches, exclusive of porch

BLUE PRINTS consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

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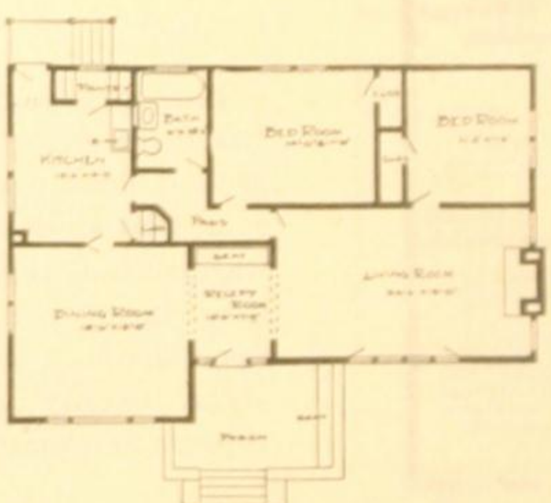
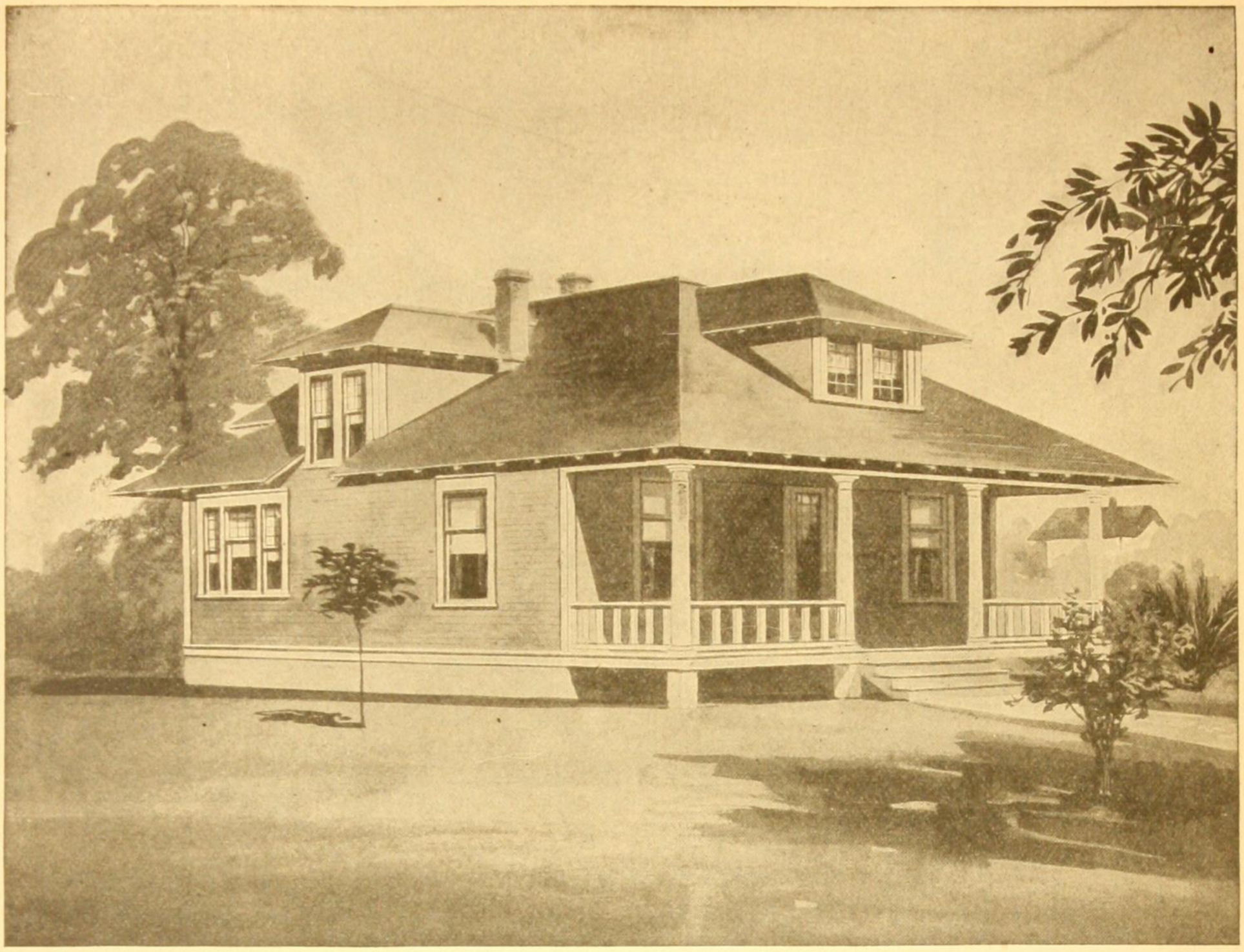
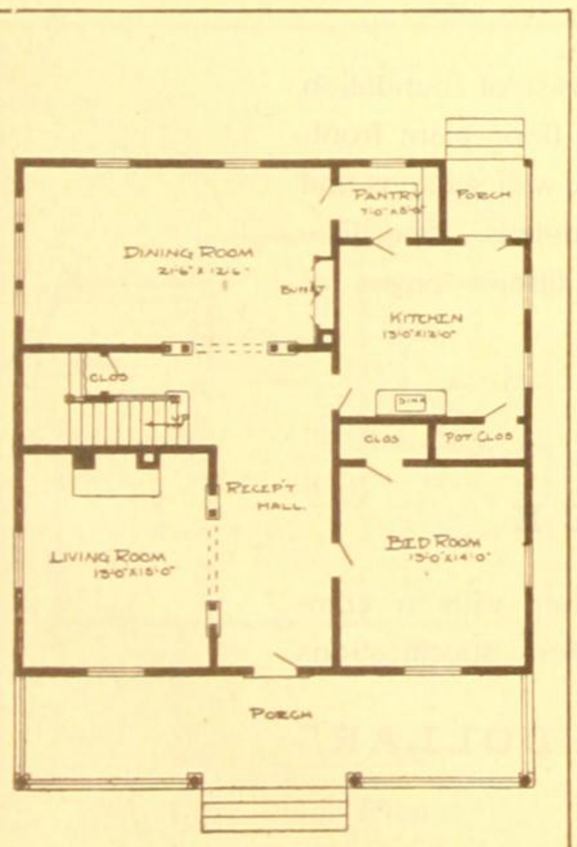


Floor Plan



DESIGN NUMBER 6089

Size: width, 36 feet; length, 36 feet, exclusive of porches



First Floor Plan

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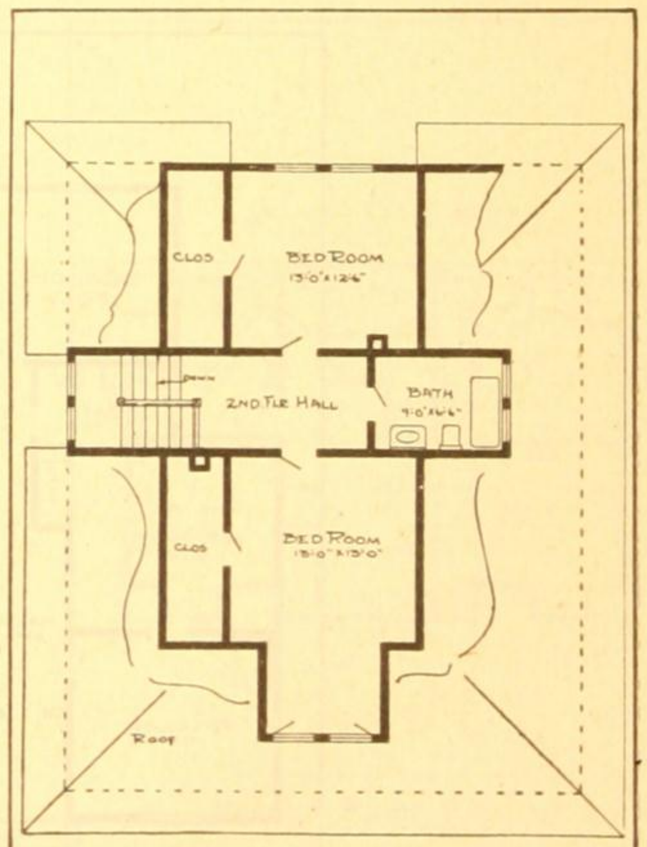
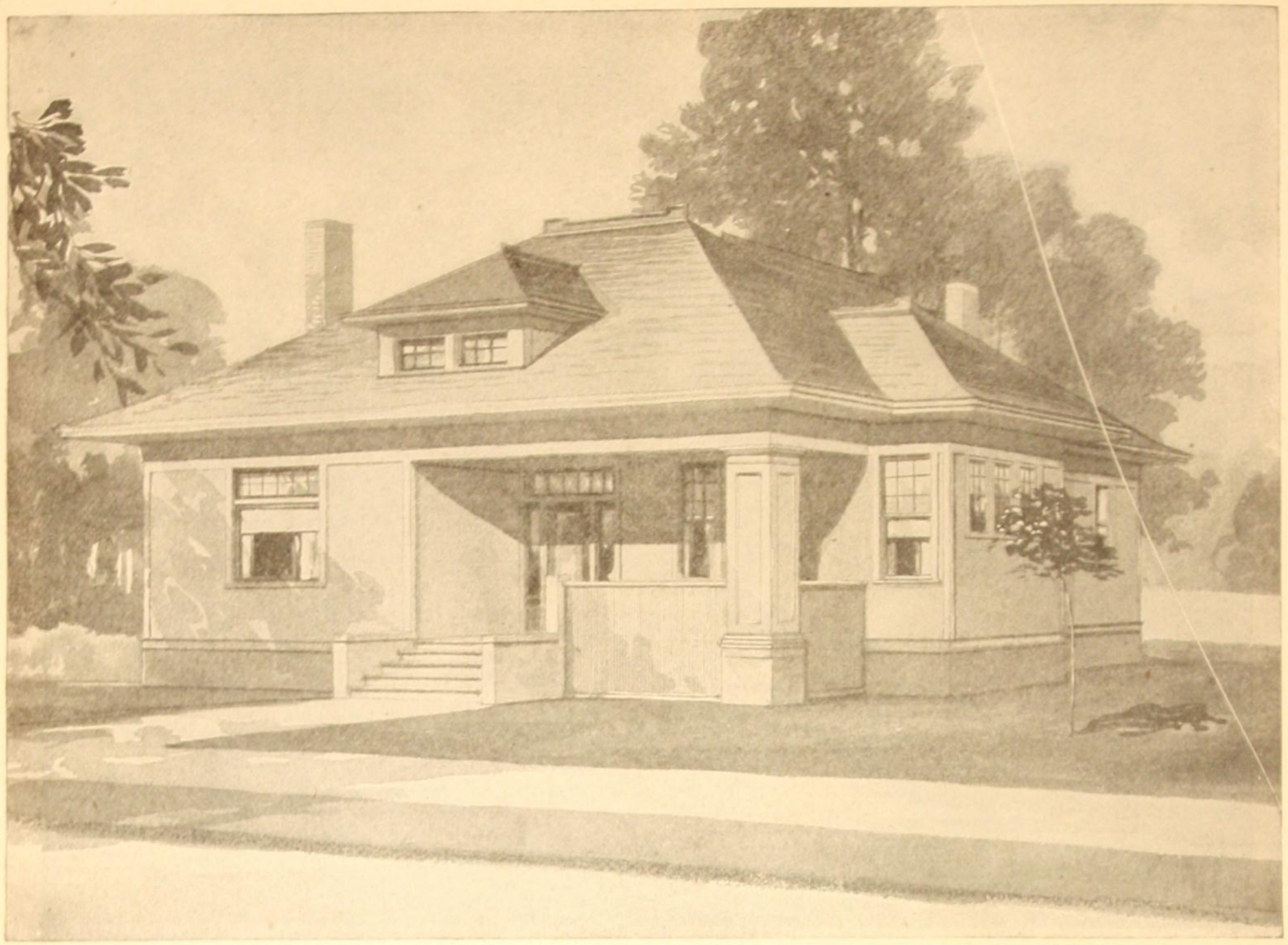
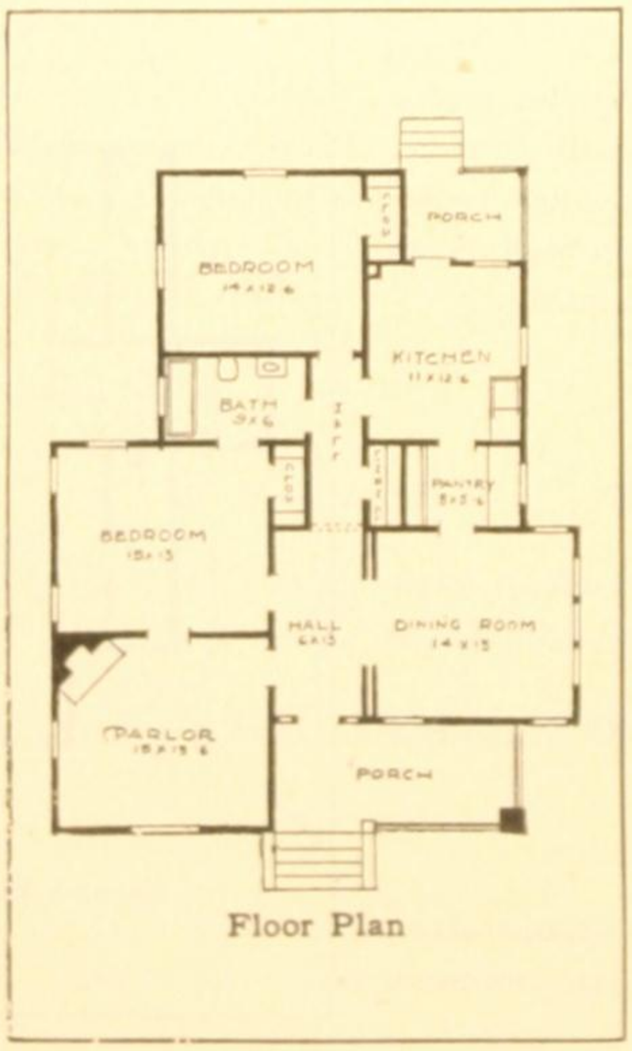


Second Floor Plan



DESIGN NUMBER 6061

Size: width, 37 feet 6 inches; length, 47 feet 6 nches



Floor Plan

BLUE PRINTS consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

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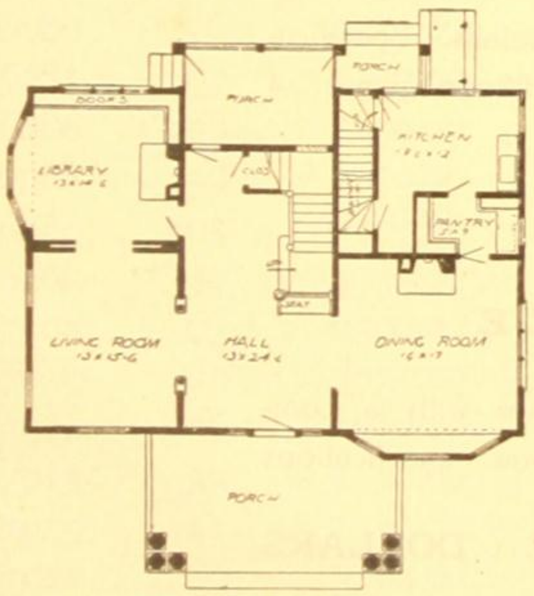
DESIGN NUMBER 6003

Size: width, 45 feet 9 inches; length, 32 feet 6 inches exclusive of porches



First Floor Plan

BLUE PRINTS consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty pages of typewritten matter.

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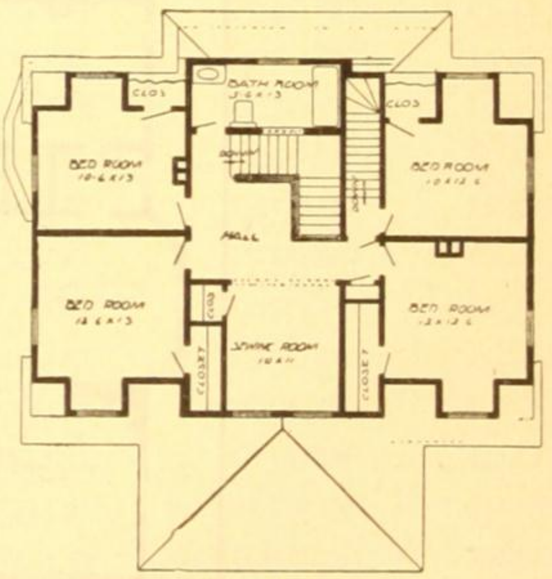
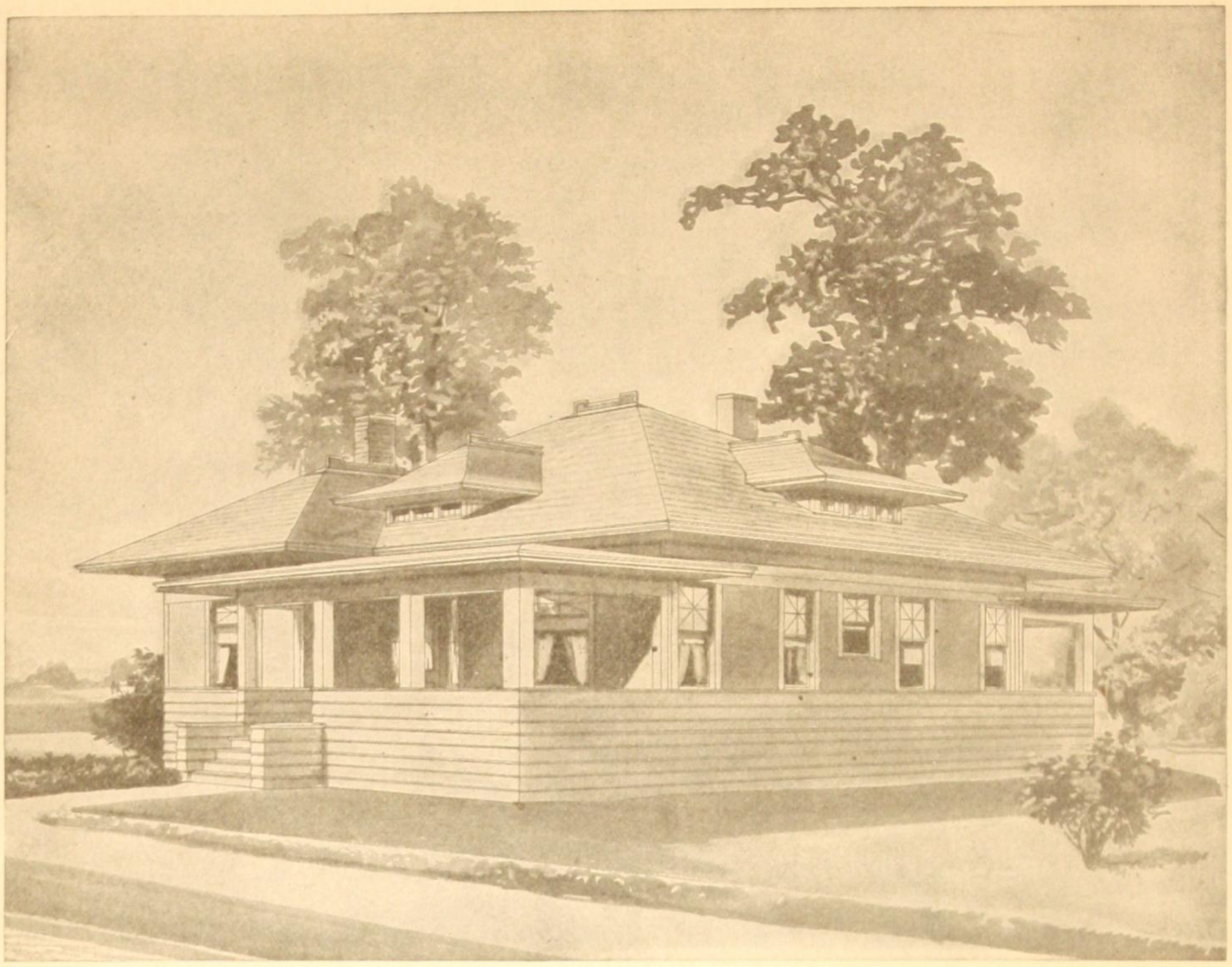
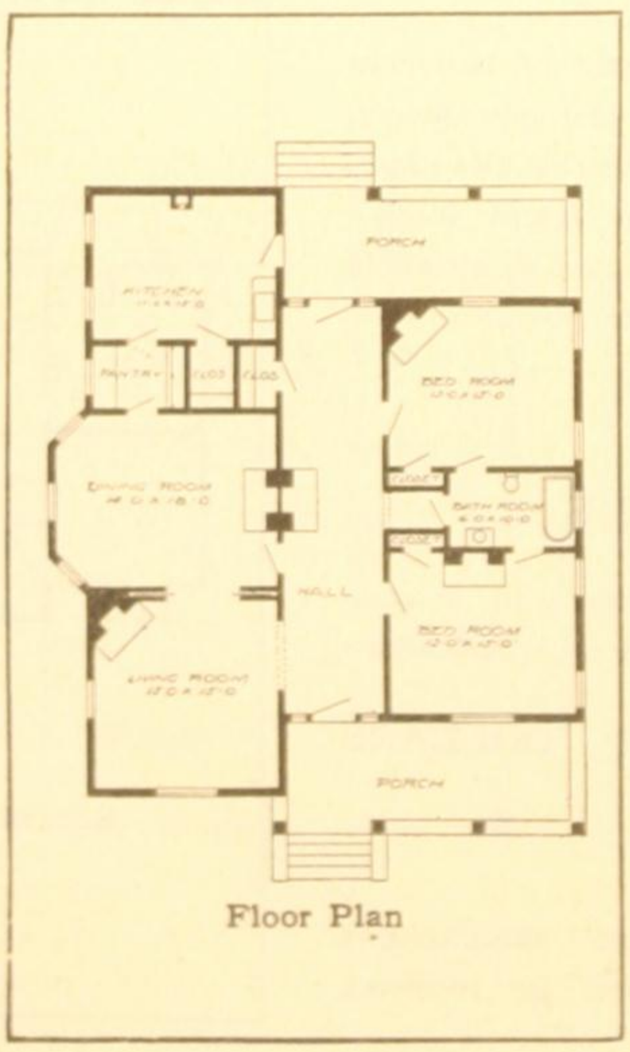


Second Floor Plan



DESIGN NUMBER 6086

Size: width, 40 feet; length, 49 feet, exclusive of porches



Floor Plan

BLUE PRINTS consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about fifteen pages of typewritten matter.

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Design
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Design.	Page.	From About	To About	Price Plans and Specifications.
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6003	107	4000.00	4250.00	15.00
6008	25	2275.00	2325.00	12.00
6011	98	2150.00	2300.00	12.00
6012	68	2875.00	3050.00	15.00
6016	95	2350.00	2550.00	12.00
6021	24	1600.00	1800.00	10.00
6029	79	2350.00	2500.00	10.00
6030	77	2275.00	2425.00	10.00
6031	58	2550.00	2750.00	12.00
6033	70	1850.00	2000.00	10.00
6034	78	2150.00	2300.00	12.00
6035	60	2175.00	2325.00	12.00
6039	9	3950.00	4100.00	12.00
6041	99	2100.00	2300.00	10.00
6042	49	2400.00	2550.00	10.00
6044	82	3000.00	3250.00	15.00
6045	40	1350.00	1500.00	10.00
6051	93	1900.00	2050.00	10.00
6053	32	3375.00	3525.00	12.00
6054	51	1675.00	1825.00	10.00
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6059	33	3000.00	3200.00	12.00
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6068	89	3000.00	3250.00	12.00
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7083	100	1850.00	2000.00	10.00
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9089	53	1250.00	1400.00	10.00
9093	42	1850.00	2150.00	15.00

ESTIMATED COST OF HOUSES

LET us give you this advice in the matter of an estimate of the cost of any house in this book—consult the Responsible Lumber Dealer and Responsible Contractor in your own immediate neighborhood. They know all the conditions that enter as factors in the cost of a house in your locality. They know what labor costs, and all the other things that govern the price of materials. You will see readily that these are varying quantities and a price that might be true in one locality will not hold in another. We might give you a price, but it would not help you and might cause you embarrassment in addition to making ourselves ridiculous, because we do not know the conditions in your locality as the ResponsibleDealer and Responsible Contractor do.

So let us tell you this: If there is a house in this book that you want to build, the first thing to do is to consult the Responsible Dealer and Responsible Contractor. In all likelihood he is your friend and neighbor. You can depend on what he will tell you after he figures on the plan, for he has had the experience in your locality and knows the costs of all the materials that will be used in the house—knowledge of a specific nature that we do not possess, neither does any one else who is not on the ground.

We are perfectly honest and fair with you in this matter. This much we can tell you, however. In every locality it is safe to say there are seasons of the year when it will cost less to build than at others. It is for the Responsible Dealer and Responsible Contractor to direct you when it is the most opportune time to commence operations. The labor market varies. The cost of materials varies. These are things over which we have no control; nor have you.

Let us tell you this also—Never build or even think of doing so without plans. They will save you money and worry. This applies to all localities. The plans in this book have been prepared by the most skilled licensed architects in the country and one motive has actuated them—the most economy consistent with style and utility. The best this Association can tell you, therefore, in the matter of arriving at a satisfactory estimate is to consult the Responsible Dealer and Responsible Contractor in every case. They are thoroughly conversant with all the conditions that govern cost and are intimately familiar with the material market in your neighborhood. Having this estimate and the set of plans and specifications you will be safely on the road to the construction of your home—and success to you.

Some people are led astray by estimated costs, so called, when you know and we know that the only ones who know and who can give an accurate estimate are the people on the ground.

Don't Take the Word of an Outsider in the estimate of the cost of a house. At best he can only guess The figures he gives may be true of his locality but may be hundreds of dollars out of the way as far as your neighborhood is concerned.

Get Your Estimate from People Who Are on the Ground—People who have made a study of these things, people whose business it is to know all the facts, people who are your neighbors and will not mislead you either intentionally or unintentionally.

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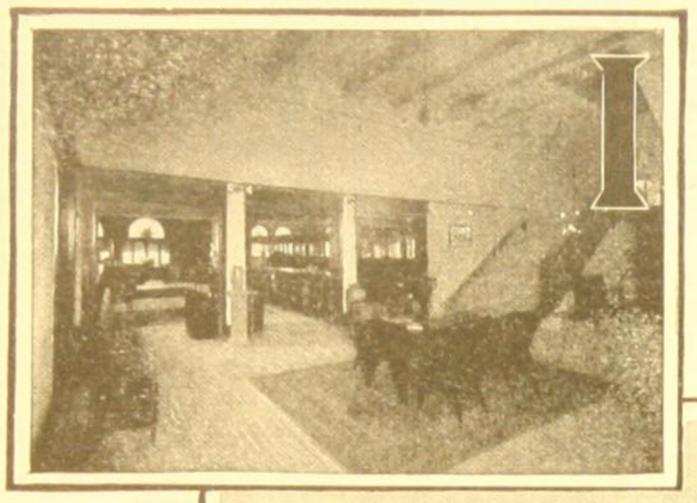

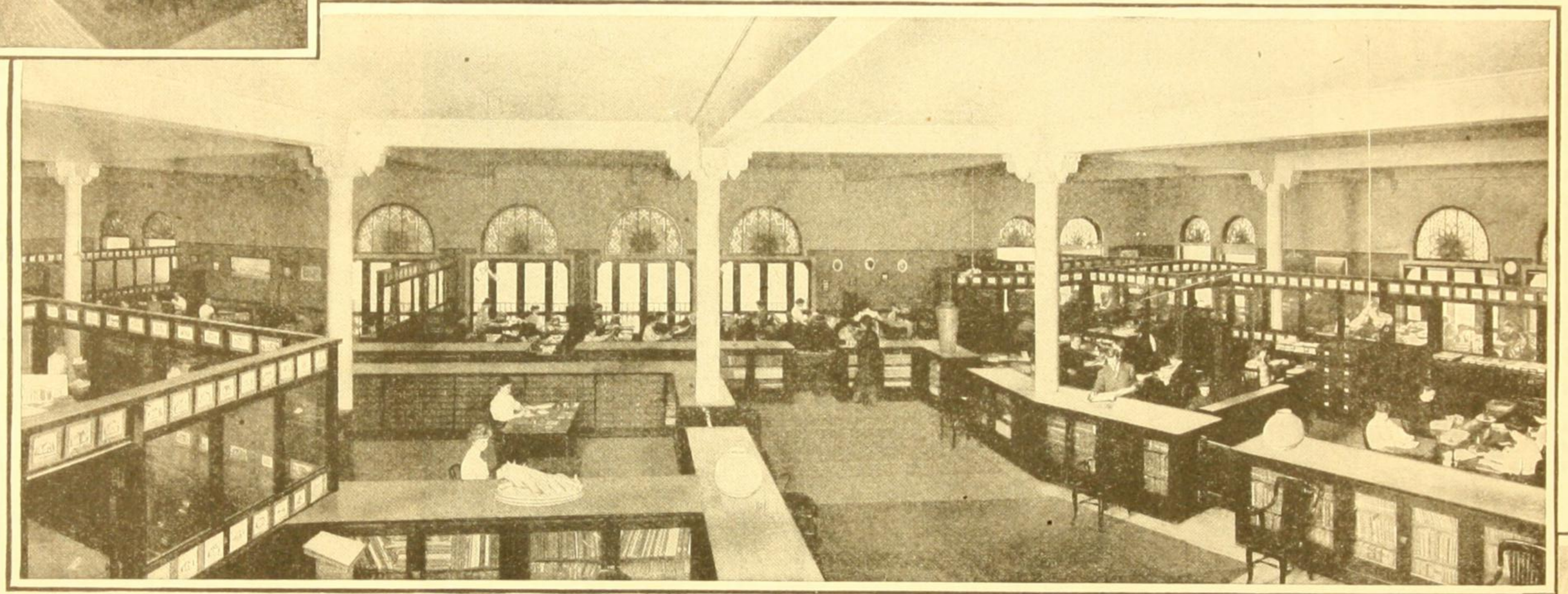

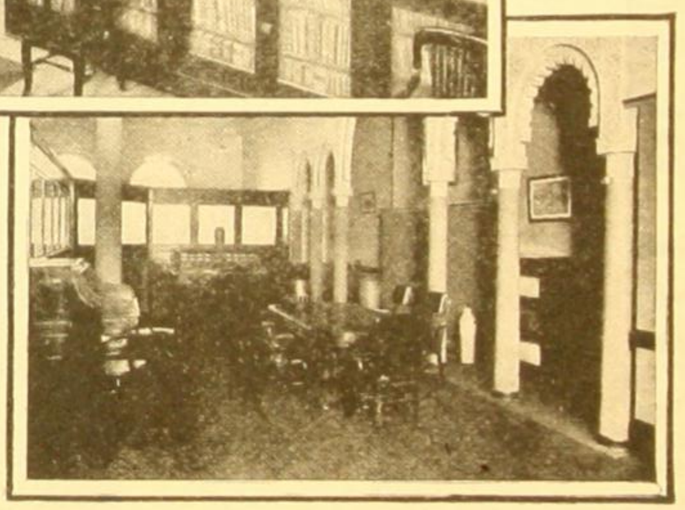

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PRACTICAL

BARN PLANS

AND

ALL KINDS OF

FARM

BUILDINGS

PREFACE

The farm building department is given not only in the interest of the farmer, but because every one is more or less dependent upon the soil and is consequently directly or indirectly interested in the prosperity of the farmer. There comes a time when every business man and most other men want to build either a house, or barn, or both. It is the province of this book to offer suggestions. Plans are necessary to avoid mistakes. It is just as easy to secure good plans as to build after the ideas prevailing in the neighborhood, probably advanced by some carpenter who has had little or no experience outside of his own town. Barns as well as houses are built or should be built for a specific purpose and there are fundamental principles which are vital if the best results are to be obtained. It is not always necessary or desirable to build expensively. It often happens that an inexpensive or even a cheap structure will answer the purpose just as well, but this book does not countenance the building of unsightly houses or out buildings. There are essentials to be built into farm buildings that cannot be seen after they are finished, but these essentials must be there or the buildings will not be right. Drainage, foundation, ventilation and economy are four requisites that have received special attention in compiling the material for this work and they are four of the worst neglected principles when ordinary farm buildings are planned. Drainage and foundation are easily treated to fit each case, but ventilation is less tangible, although it is equally important, while the study of economy has no beginning and no legitimate ending for it embraces not only the construction of the building, but the use of it ever after. Even a small farm building is worth very close attention in the planning, location and building because of its appearance and the labor it entails in its connection with general farm economy.

In the arrangement of the book the first point made clear to the reader is the need for the structure. Naturally what the building is wanted for should be first made plain. Then the construction is followed to completion when the building takes its place in the farm economy.

It is a book, the author believes, which will make interesting a subject that farmers have always before them, and enable them to find a design for any kind of barn or farm building that may be needed. It is a pleasure to contribute anything to add to the beauties and charm of American farm life, and in that spirit this volume is given to the agricultural world.

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Department of Dairy Barns

LARGE DAIRY STABLE—A100

Price of Blue Prints, $15.00.

THE careful housing of dairy cows is receiving systematic consideration as never before. Investigations have been conducted by men who are thoroughly conversant with the subject from a practical as well as a scientific standpoint.

Government milk inspectors, backed by public opinion, have established a thorough system of inspection. City milk supply is now traced to its source, the cows examined thoroughly for condition and health and the stable for cleanliness. If incompetency or indifference has led the dairyman to disobey the state sanitary requirements he is not permitted to ship milk until he satisfies the inspector that he has mended his ways. This course was made necessary by the rapidly increasing volume of business which is conducted by such a cosmopolitan class of people; comprising as it does, all grades of producers from the most progressive farmer down the line of small dairymen to the ignorant huckster. Cleanliness is required by inspectors, first, last and all the time; thus, making the right start, for cleanliness, leads to many virtues. A man who is particular about all utensils, his wagon, stable, cattle and himslf, will not tolerate a poor stable or an unhealthy cow. He may not understand the science of ferments or disease germs, but his milk supply will be good and wholesome, because he robs harmful bacteria of the dirt upon which they thrive.

In our northern climate, warmer stables have for years occupied the attention of our best farmers and stockmen. Bank barns were the outgrowth of a desire to provide comfortable stables that were both warmer and better. The convenience of having all stock under one roof, tucked carefully away from the cold, with plenty of feed overhead ready at all times to find its way to mangers and food racks by gravity, proved very alluring to ambitious farmers all over the country. But animals housed in these expensive dungeons were not happy and showed their discomfiture in watery eyes, lusterless hair, hot noses and hot, feverish breath, with fretful, quarrelsome actions together with their inability to grow or fatten. Too frequently cattle thus housed were attacked by bovine disease germs, which were materially assisted in their work of destruction by conditions so expensively though unintentionally provided. Stockmen thought the trouble was caused by too great a change in temperature by allowing the cattle to go out for an airing or for water each day; to remedy this, water buckets were added to the stable outfit and the stock confined in an abominable atmosphere for weeks at a time.

Atmospheric conditions affect animals differently. The heavy breeds of beef cattle are usually phlegmatic in disposition, paying little attention to ordinary disturb-

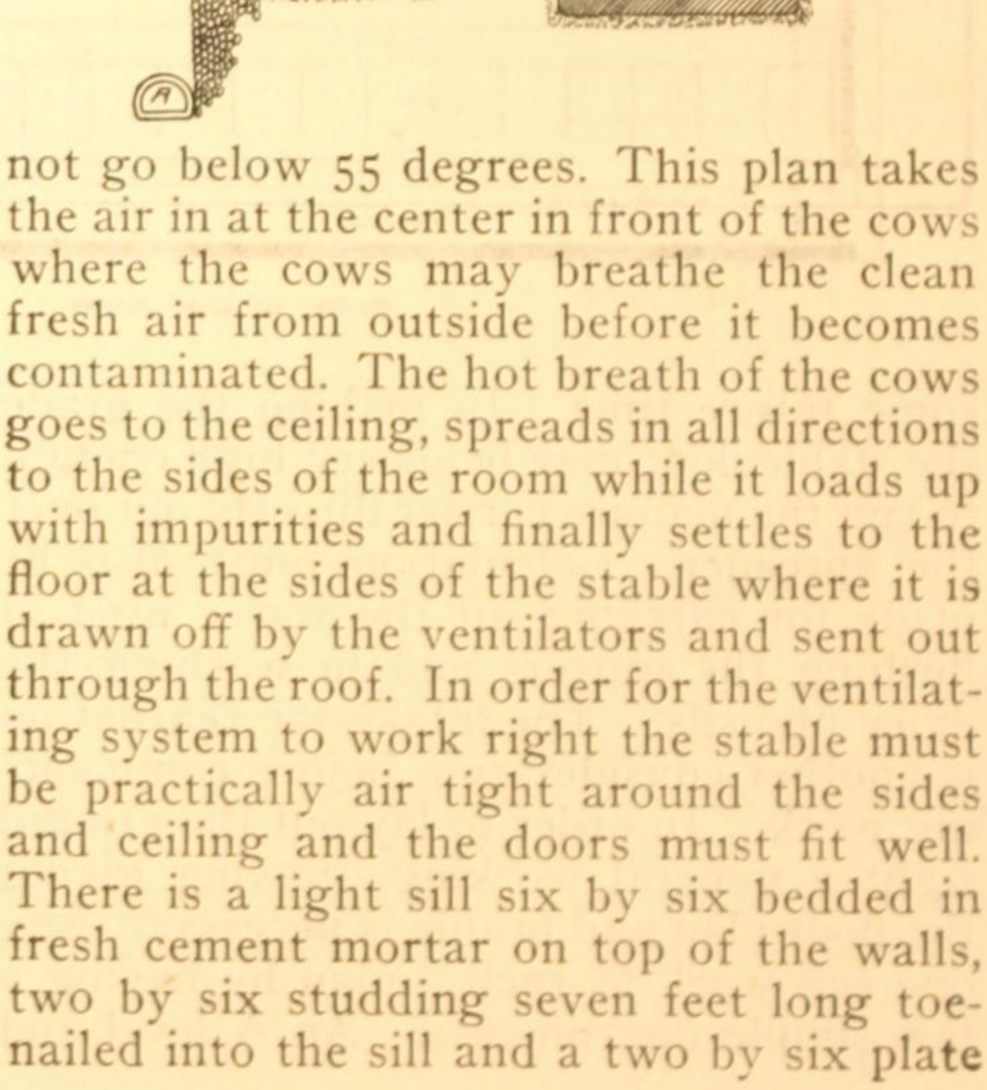
complete and the whole thing will be in one piece.

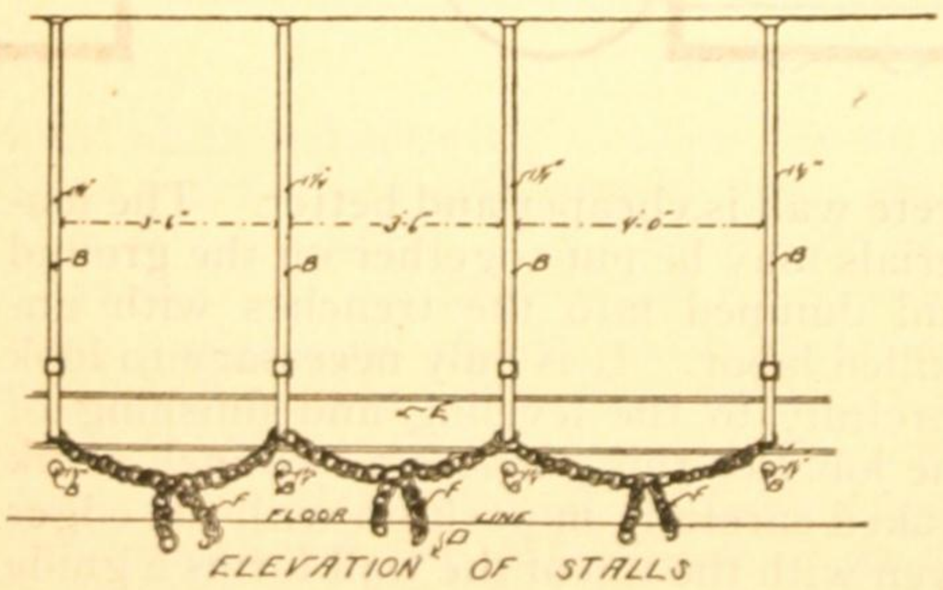
The Floor

After the walls are finished the grading for the floor comes next in order. The profile shows the relative position of the intake for fresh air, the floor of the feeding alley, position of the cement mangers, inclines of the floor in which the cattle stand, the gutter and the walk behind the cows. Besides the cross section the mangers and gutters incline with the length of the stable. In order to locate all these points a good many grade stakes are necessary. They are set carefully to measurement and driven down until the tops come right for the grade. It is easier to do this work before the building is erected. One point to be rembered is that the wall should not extend much above the floor for the reason that dampness will collect on the inner side or warmer side of the wall especially in winter. Also the iron pipes designed to partition the stalls and support the ceiling should be imbedded in cement when it is fresh.

Superstructure

It is cheaper to build barns and stables low because lighter material may be used in their construction. A dairy stable should have a low ceiling to facilitate ventilation. Seven feet is high enough for a ceiling but eight feet looks better if the stable is long and where there are a good many cows together there is no objection to an eight foot ceiling. A good deal depends on the number of cows kept. A stable may be built on this plan to hold twenty-four cows or it may be made long enough to hold one hundred. The principle of ventilation depends on the circulation of air. Warm air is lighter than cold air and it naturally goes up. In order to ventilate a stable we must get animals enough in it to warm the air. There is little or no circulation in a cold room. For the ventilation to work right the temperature in a stable should not go below 55 degrees. This plan takes the air in at the center in front of the cows where the cows may breathe the clean fresh air from outside before it becomes contaminated. The hot breath of the cows goes to the ceiling, spreads in all directions to the sides of the room while it loads up with impurities and finally settles to the floor at the sides of the stable where it is drawn off by the ventilators and sent out through the roof. In order for the ventilating system to work right the stable must be practically air tight around the sides and ceiling and the doors must fit well. There is a light sill six by six bedded in fresh cement mortar on top of the walls, two by six studding seven feet long toenailed into the sill and a two by six plate

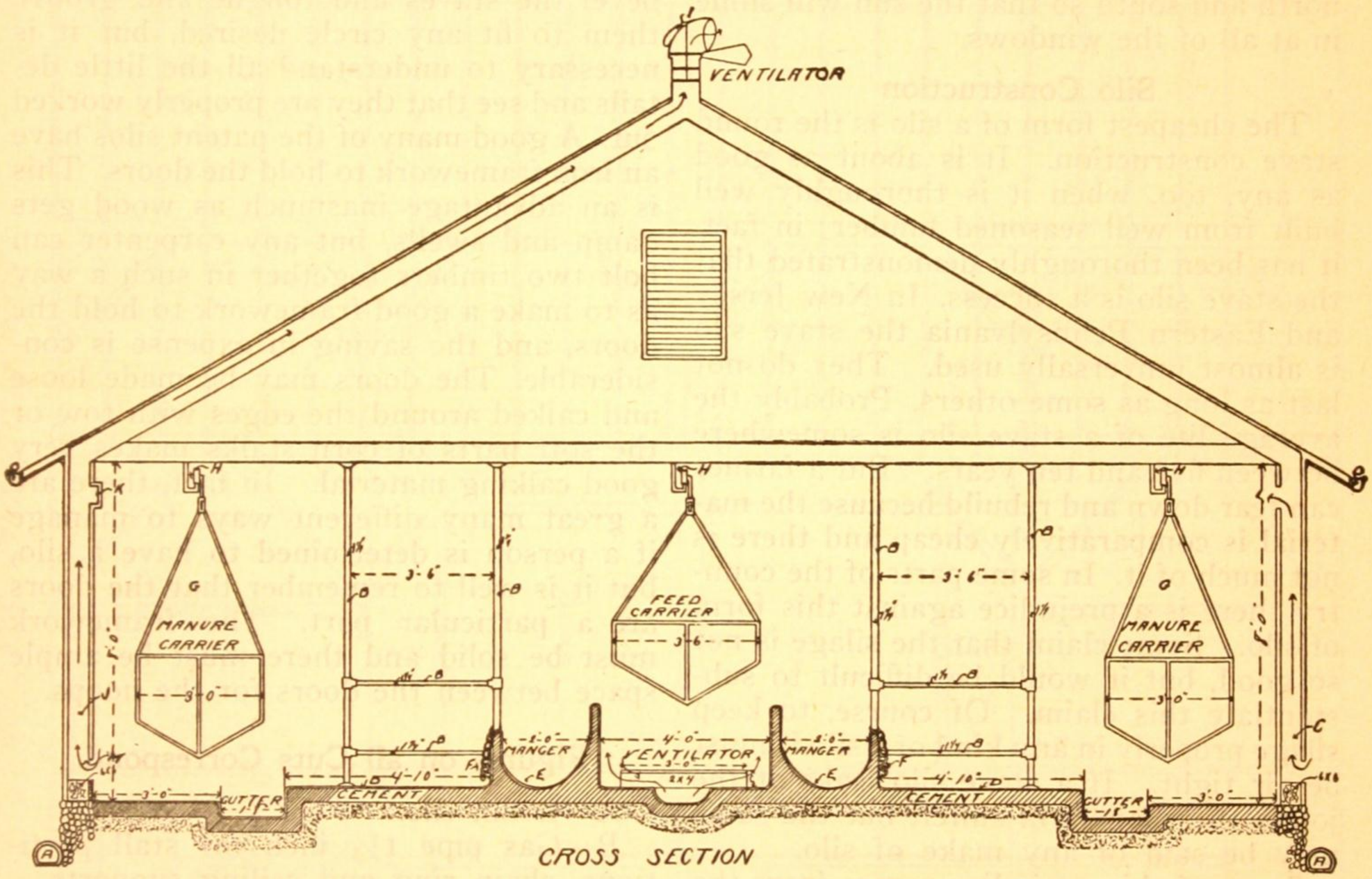




spiked on top of the studding. Building paper is nailed to the studding both inside and out. The inside is lined with matched ceiling without bead. This is to eliminate all cracks and joints as far as possible. There are no cracks and places for dust to lodge as all stable dust is bacteria laden. In like manner building paper is tacked to the ceiling joists and under the paper a light matched ceiling is nailed so that the whole room is smooth around and there are no projections or shelves of any kind to hold dust. The stall partitions are as light as possible for the same reason. Door and window frames are made flush on the inside and just a light four inch casing turned to cover the joint. It is better to use a great deal of care in laying the building paper around all such places to prevent air openings. It is not intended to use the loft over this stable for storage or any purpose but it is better to build the loft so that it may be swept occassionally to clear out the dust. A window is placed in each gable for the purpose of causing sufficient ventilation to keep the loft cool. The outside of the stable is boarded up with patent siding and a light box cornice makes the finish at the eaves. The ventilating system is shown in the cuts. It pays to to put on an eave trough whether the water is wanted for use or not because the drip from the eaves will cause dampness and this should be avoided. Because the building is low a light roof is sufficient. Two by four rafters are heavy enough if well supported by cross collar beams.

The Silos

In this plan the silos are placed at the end of the stable. If the stable is long however it is better to put the silos in the middle. It will save steps at feeding time. It is better to have two small silos than one large one. From sixteen to twenty feet in diameter is big enough for any silo. The surface may then be fed off every day and the silage kept fresh at all times. The milk room is at the side of the silo. The floor and sides are built entirely of cement and



CROSS SECTION

the room has a white matched ceiling. It is provided with an open drain that connects with the main drain outside of the building. The milk room contains a separator, scales, Babcock tester and a shelf to hold the smaller utensils and a porcelain lined sink for washing dishes. Outside of the milk room is a rack to hold the cans where they are turned upside down every morning in the sun. Beyond the silos and milk room is the barn where the roughage is kept and the track from the stable runs across so the feed may be brought by an overhead track carrier. The silos are at the north end of the building. The manure is taken out through the south doors. The cows are also let in and out of the south doors. This style of stable should be built north and south so that the sun will shine in at all of the windows.

Silo Construction

The cheapest form of a silo is the round stave construction. It is about as good as any, too, when it is thoroughly weil built from well seasoned lumber; in fact, it has been thoroughly demonstrated that the stave silo is a success. In New Jersey and Eastern Pennsylvania the stave silo is almost universally used. They do not last as long as some others. Probably the average life of a stave silo is somewhere between five and ten years. But a farmer can tear down and rebuild because the material is comparatively cheap and there is not much of it. In some parts of the country there is a prejudice against this form of silo. Some claim that the silage is not so good, but it would be difficult to substantiate this claim. Of course, to keep silage properly in any kind of a silo it must be air tight. If a stave silo leaks at the joints the silage will suffer, but the same may be said of any make of silo.

Some of this prejudice comes from the dairy farmers who formerly had experience with stave silos which were constructed by putting rough planks together without beveling the edges, but the way staves are made now with bevels carefully cut to fit the circle and provided with heavy iron hoops, and plenty of them, there is probably no better construction. Some stave silos have round tongues and grooves. This is better than a plain straight bevel, but it is not absolutely necessary. The ends of the staves where they butt together are fitted with an iron tongue let into a saw cut in each end of the abutting staves.

A convenient height for a silo of this kind is thirty-two feet made from sixteen foot stuff, but some staves must be eight feet long in order to break joints. Most stave silos erected are bought from some manufacturer who has a patent on some little contrivance in connection with their manufacture, but any farmer can order the material and build his own silo if he wishes to do so. The mills will cut and bevel the staves and tongue and groove them to fit any circle desired, but it is necessary to understand all the little details and see that they are properly worked out. A good many of the patent silos have an iron framework to hold the doors. This is an advantage inasmuch as wood gets damp and swells, but any carpenter can bolt two timbers together in such a way as to make a good framework to hold the doors, and the saving in expense is considerable. The doors may be made loose and calked around the edges with tow or the soft parts of corn stalks makes very good calking material. In fact, there are a great many different ways to manage if a person is determined to have a silo, but it is well to remember that the doors are a particular part. The framework must be solid and there must be ample space between the doors for the hoops.

Figures on all Cuts Correspond.

A—Drain tile.

B—Gas pipe 1¼ inch for stall partitions, chain ring and ceiling supports.

C—Ventilation intake.

D—Stable floor where cows stand having an incline of two inches.

E—Cement manger having an incline of ⅛ inch per ten feet.

F—Cow chains.

G—Manure carriers.

H—Car tracks, should be near the ceiling to give plenty of head room.

I—Hood ventilator, tail on opening side with counter weight to prevent friction, and allow it to turn easily. This hood does not touch the pipe but turns on a spindle which passes through the upper cross piece in the pipe and is socketed in the lower cross piece about three feet down in the pipe.

J—Ventilator shaft drawing foul air from near the floor.

K—Register for use in hot weather to draw off the hot air when the stable doors are open.

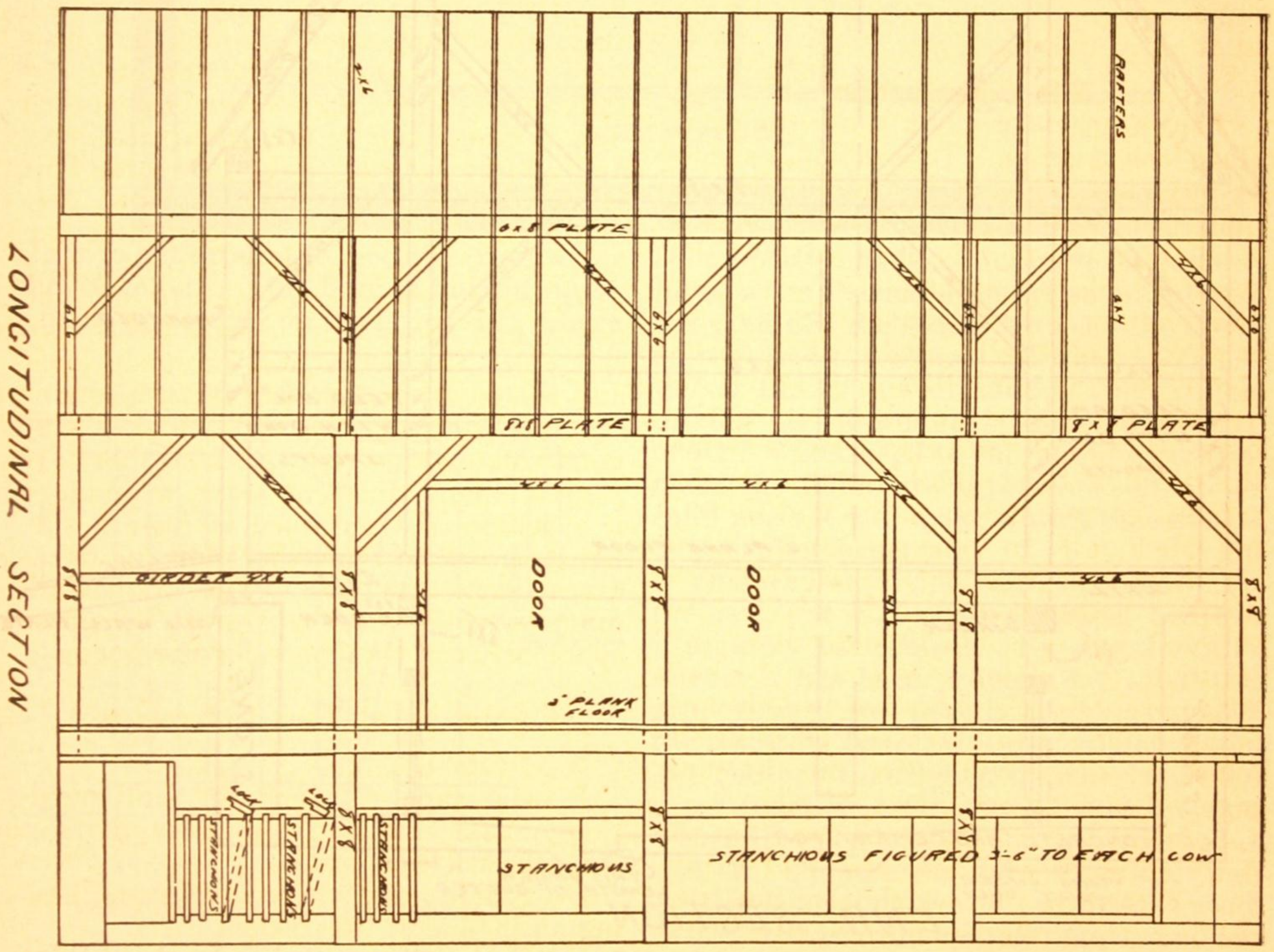
L—Register that may be partially closed to regulate intake of fresh air.

M—Register to regulate the amount of draft allowed to foul air. This is one of the most important features of the system as the warmth of the stable as well as the quality of the air is controlled by it.

O—Galvanized iron gutter.

DAIRY BANK BARN—A125

An old fashioned dairy barn is shown in plan (A125). There are a good many such barns still in use in Wisconsin. Those



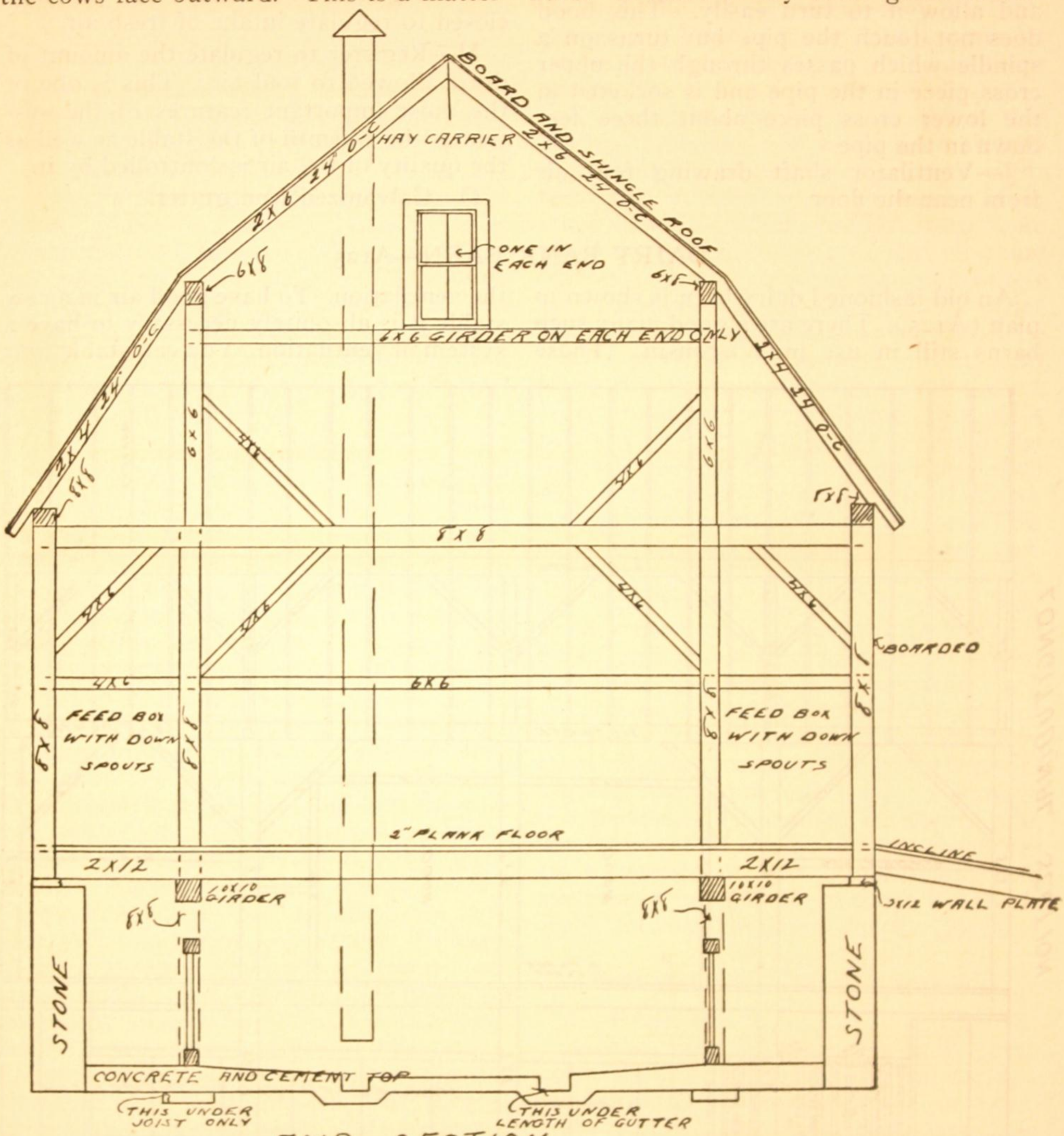
using them say they are satisfactory under certain conditions.

One good feature about this stable is the ventilation. To have good air in a cow stable it is absolutely necessary to have a system of ventilation. You can stable four or five cows together and depend on chance openings to provide them with oxygen, but you cannot depend on Prov-

idence to keep your cattle alive in a large stable unless you assist a little bit.

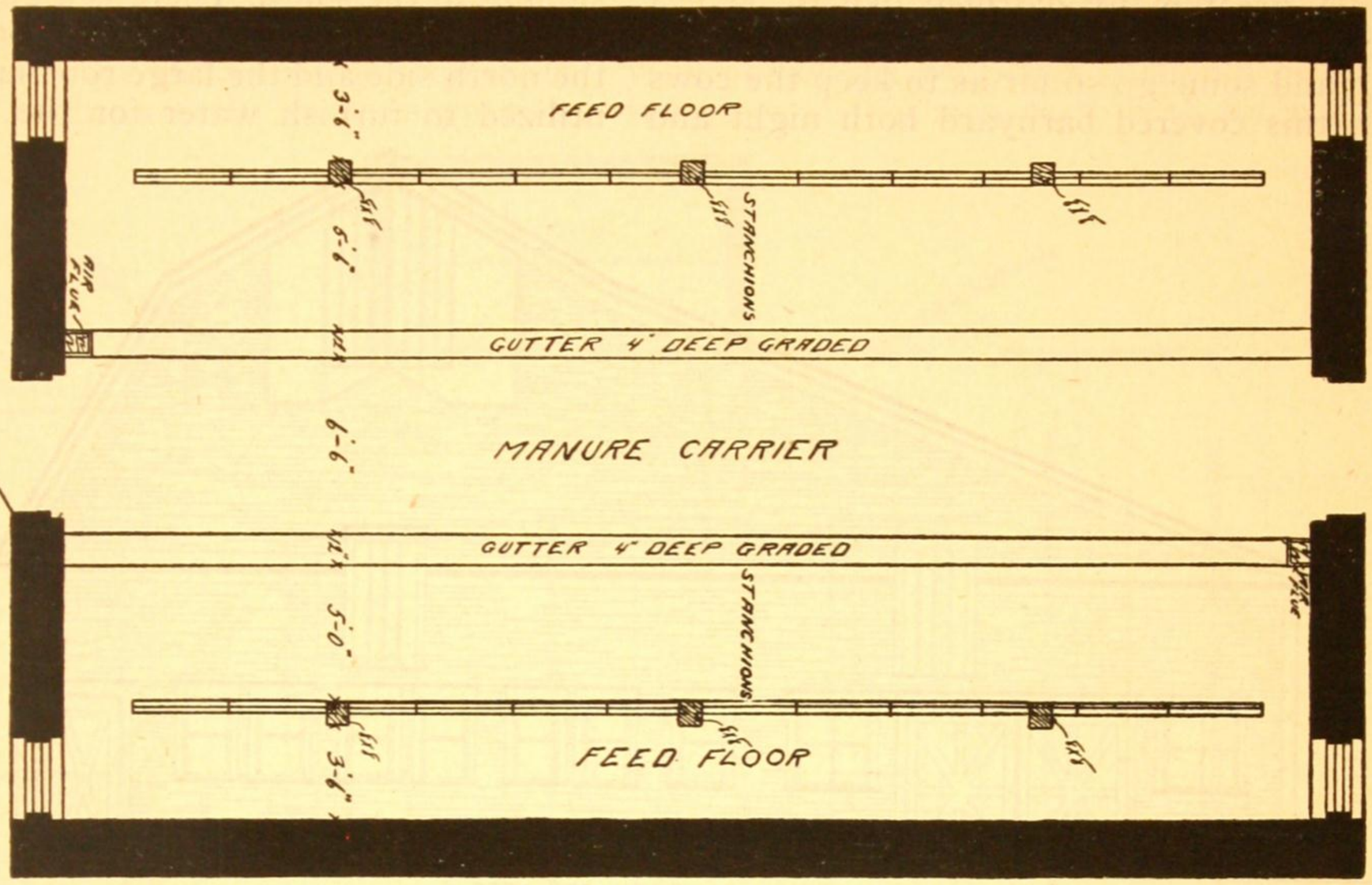
A good many dairymen prefer to have the cows face outward. This is a matter of individual preference. Probably nine stables out of ten are made to face the cows in, but this is no dead open and shut reason why this stable should be built that way. One advantage of having the two manure gutters in the middle is that a cart may be driven through to remove the manure. If there is any other good reason I am not familiar with it. In these Wisconsin stables the old fashioned stanchions are used.

There is a large amount of storage over-

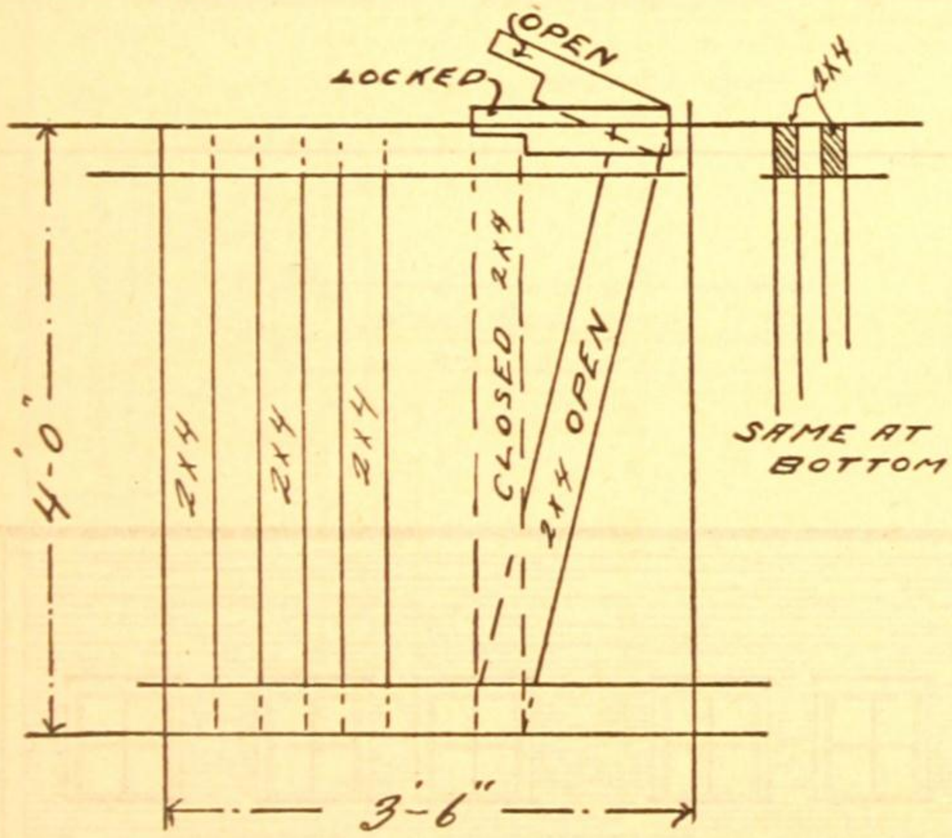


END SECTION

head in a barn like this, and it is a convenient barn to do the work in except in the matter of feeding the cows. It takes more steps to get around to feed the cows when they face out. This barn is backed up to a bank, preferably on the north side, where the incline may be had easily to drive in on the main floor. The horse fork is worked from the center.



BARN FOR TWO COW STABLE
32 FT WIDE SOFT LONG



SECTION OF STANCHIONS

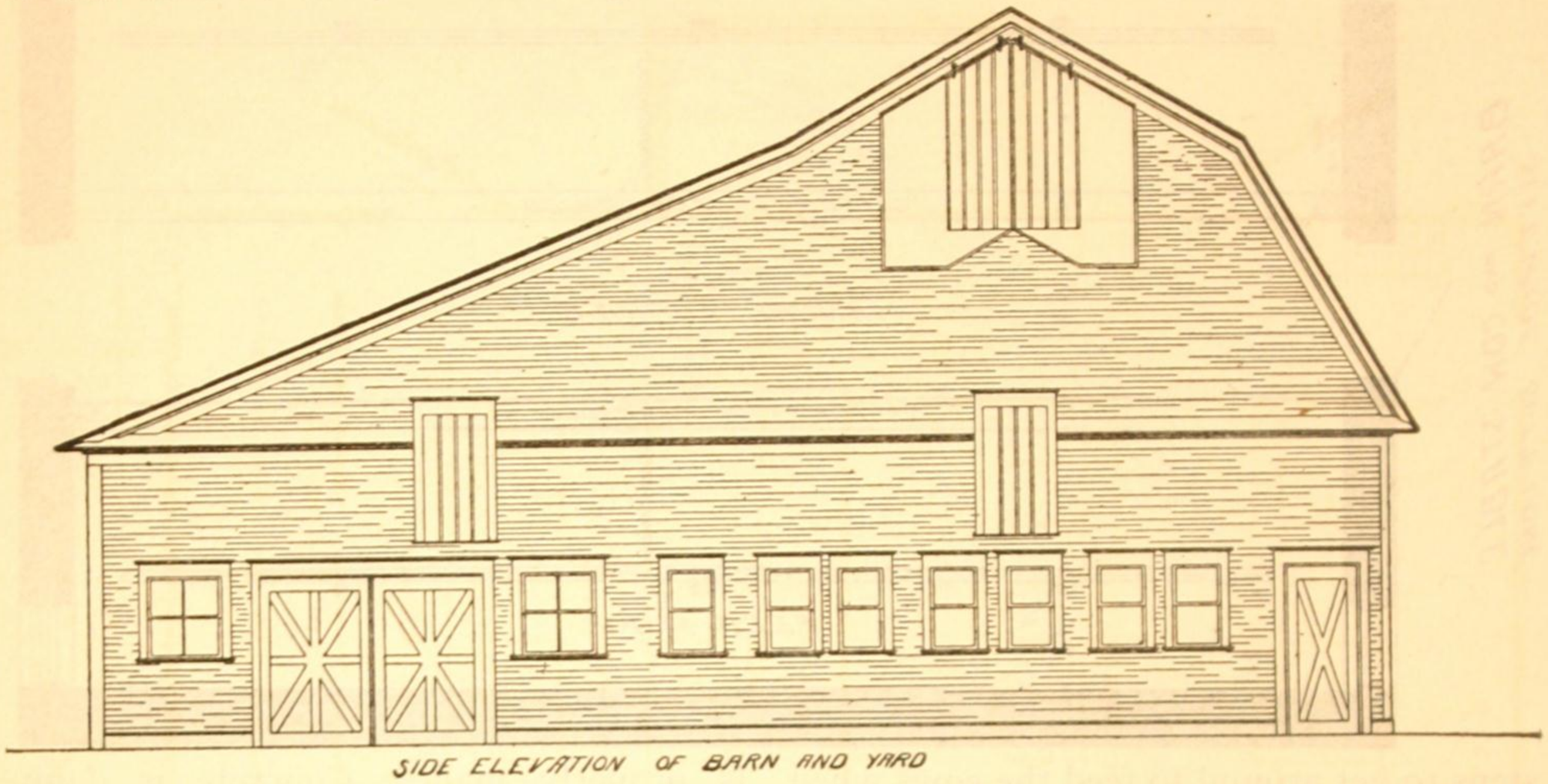
Although stone is stipulated for the walls of this building, concrete of course will answer the purpose just as well, in fact concrete is better than stone when it is properly made. Concrete is dampproof when the materials are so mixed that the sand fills the spaces between the broken rock and the cement fills the spaces between the grains of sand. Then if the mixing is thoroughly done and just enough water used to thoroughly amalgamate the different ingredients into one solid mass it will make a wall that dampness cannot penetrate.

This way of mixing concrete is not only the best, but it is usually cheaper because it requires less cement. By actual experiments it has been proven that when the proportions are exactly right as stated the resulting concrete is not only stronger but cheaper than when a richer mixture is put together. Of course the wall under a barn like this may be poorly constructed and still support the barn for a lifetime. At the same time if you can make a wall that is harder and better than stone for the same amount of money it is much better to do so. In making the floor of course you work on a different plan because a stable floor receives a great deal of wear.

COMBINED BARN AND COVERED BARNYARD—A102

Cost of Blue Prints, $15.00

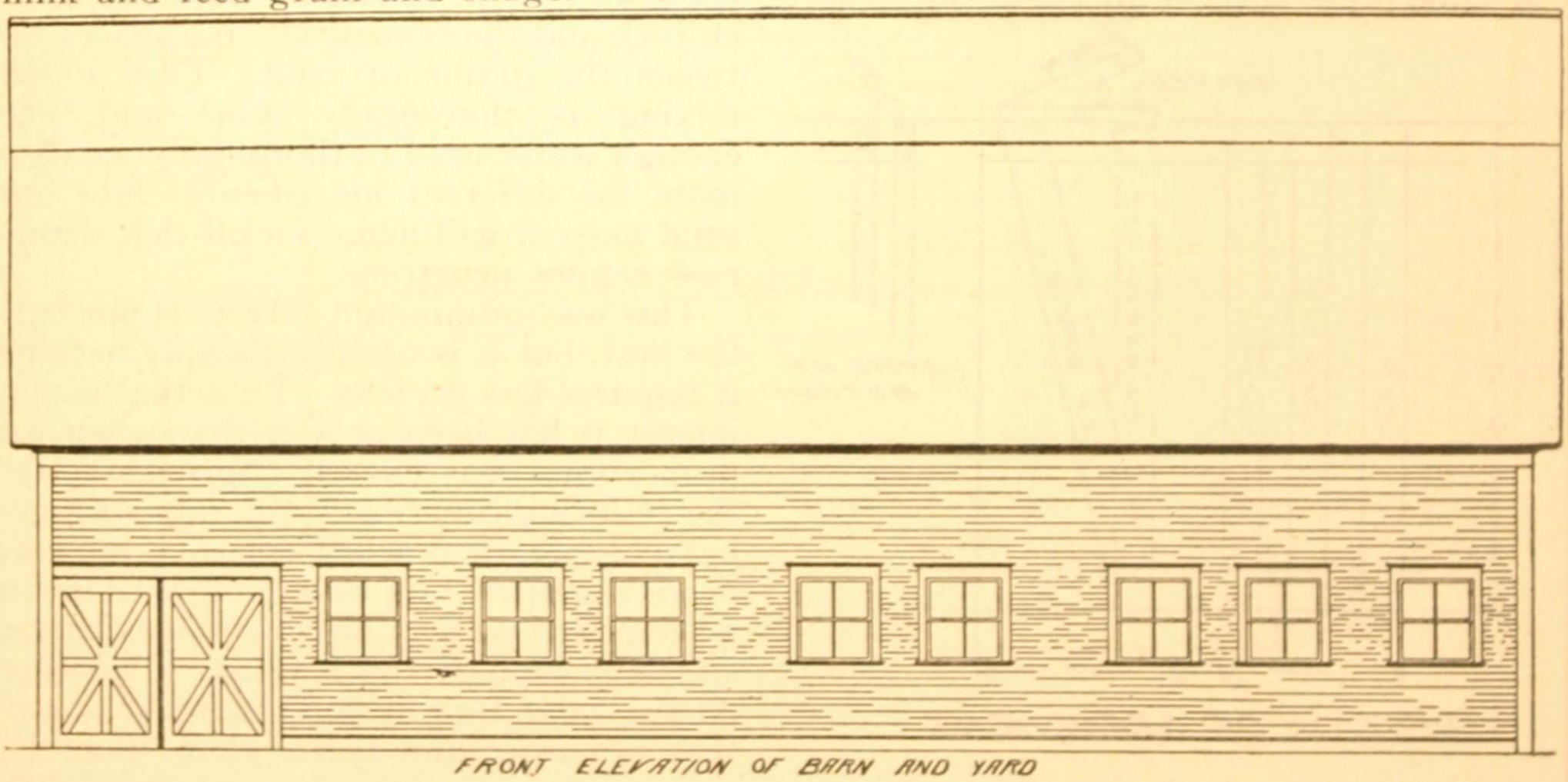
A great many dairmen like to have a covered barnyard for the cows to exercise in and some go so far as to keep the cows in this covered barnyard both night and day, just stabling them long enough to milk and feed grain and silage. In some part of the country the covered barnyard is growing in favor.



SIDE ELEVATION OF BARN AND YARD

The plan, (A102), is designed for a bank sloping to the south. There is a good root cellar in the bank next to the building on the north side and the large roof surface is utilized to furnish water for the cistern. A cistern filter is placed inside the building so it won't freeze. To have nice cistern water it is best to run it through a filter.

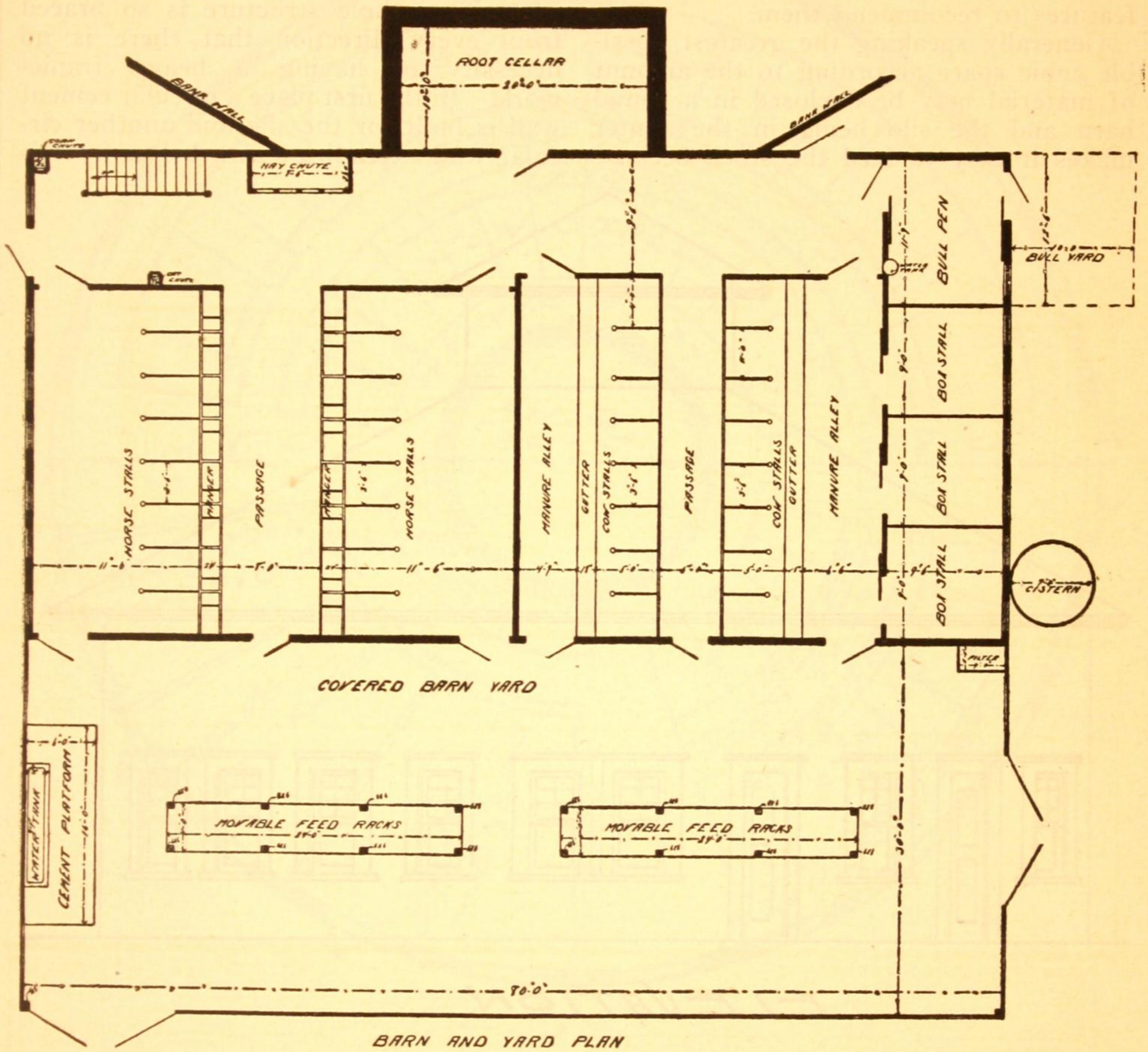
The feed racks in the covered barnyard are made movable to facilitate driving



FRONT ELEVATION OF BARN AND YARD

through at cleaning time. Mild days in winter the manure spreader is brought in at one door, loaded and taken out at the other. The racks are placed in the center under the feed chutes so the roughage from the storage above may be dropped into them with as little work as possible.

A bull pen is shown in the northeast corner with the yard outside for exercise. It depends somewhat on the slope of the bank whether this is the best place to put the bull pen or not. You want the bull yard out of the way, still it should be in full view of the barn yard, both for convenience in feeding and attending to the bull, and to keep the animal from becoming lonesome and cross. Possibly the position of the bull yard and the cistern might be reversed to the advantage of both as it would give more bank to hold the cistern and level ground for the bull.



BARN AND YARD PLAN

With a cistern and a windmill the water tank is kept supplied all the time so the cows may run to it when they want to. The stable floor should be about two feet higher than the floor in the covered barnyard. This gives an eight foot ceiling for the stable and a ten foot ceiling in the yard.

ROUND DAIRY BARN A-205

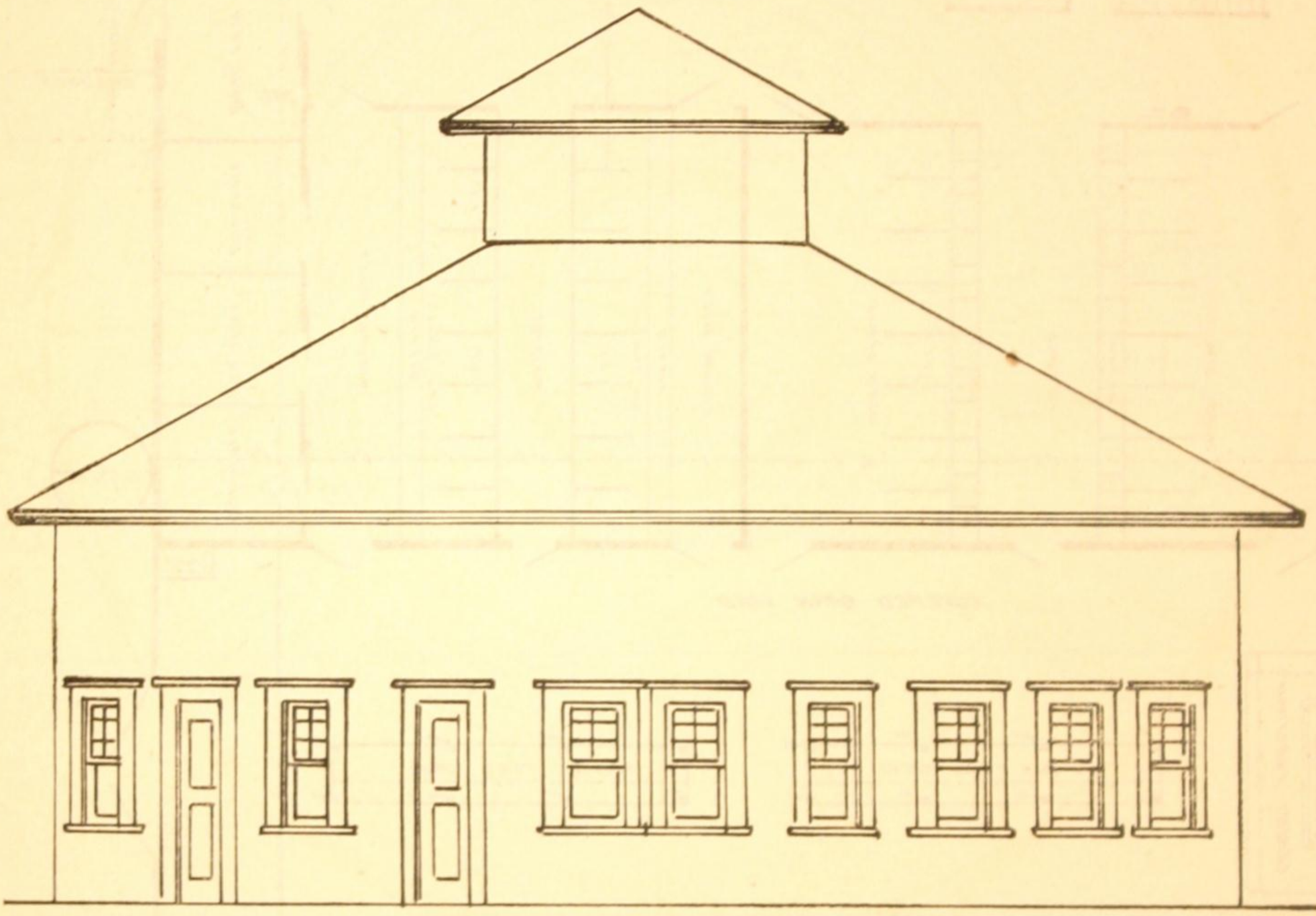
Cost of Blue Prints, $20.00

A round barn should have a silo in the center and the silo should be a part of the barn. Round barns are not very fashionable considering the number that one may see in a day's travel, but there are many features to recommend them.

Generally speaking the greatest possible cubic space according to the amount of material may be enclosed in a round barn and the silo being in the center makes it easy to feed the stock because all the stalls may be placed within easy reach.

A cement silo is more desirable because it is durable but the first cost is greater. Wooden silos rot out in a few years' time and certain parts of them must be replaced, but this need not be taken as positive proof that the cement silo is the best under all circumstances.

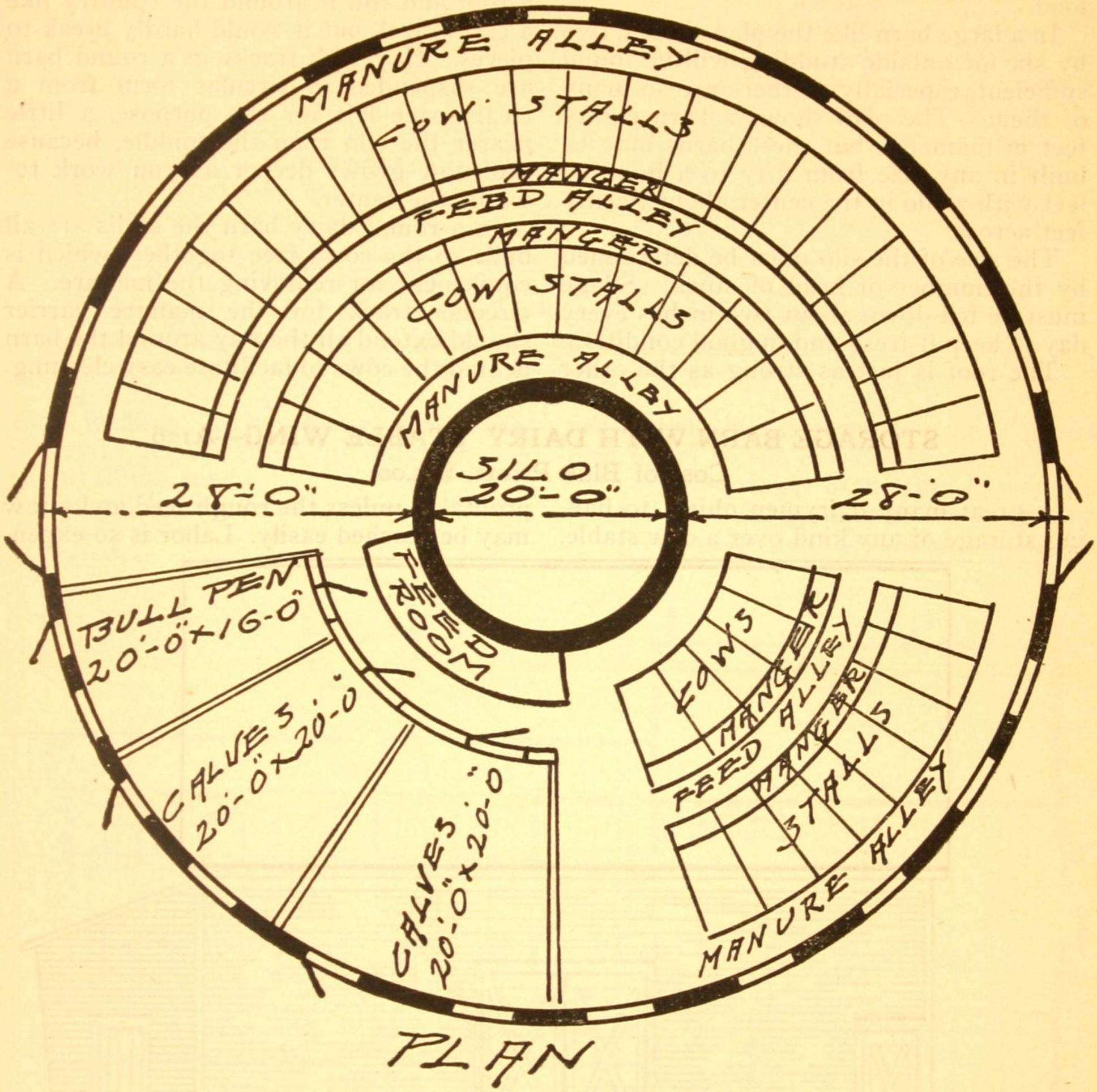
Whether a cement or wooden silo is built the frame work of the barn is of light construction, and is framed into the silo. The whole structure is so braced from every direction that there is no necessity of having a heavy framework. In the first place a circular cement wall is built for the silo and another circular wall extending down below frost is built around outside of the barn. This wall reaches up about a foot above grade with the exception only of the doors to drive through and at these places the wall is widened to make a slanting bridge approach from the outside up to the level of the stable floor. These approaches are



ELEVATION

reinforced with strong cement mortar to make them durable.

Circular sills may be built up on this wall or the studding may be set up on the cement and tied together both inside and



PLAN

holding a cask together, the only exception being at the doorways, and provision may be made here to let the door posts into a recess in the wall. Two by four or two by six studding may be used ac-

out with an extra piece bent around and nailed firmly to each end. In fact the circular outside boarding makes the sides very solid without anything extra at the bottom because the boarding running round and round is like so many hoops

cording to the distance apart and the size of the barn.

The joists all point to the center, the outer ends being spiked to the studding and they are again spiked together at the laps. The joists are suspended at inter-

vals by girths and these girths are supported by the stall or pen partitions. It should be remembered here that the principal weight comes on these supports and they should be heavy enough to carry the load.

In a large barn like the plan shown, two by six for outside studding will be found sufficient, especially as there are so many of them. The plan shows a barn eighty feet in diameter, but these barns may be built in any size from fifty to a hundred feet with a silo in the center about twenty feet across.

The size of the silo must be determined by the number of head of stock. Silage must be fed down about two inches every day to keep it fresh and in good condition.

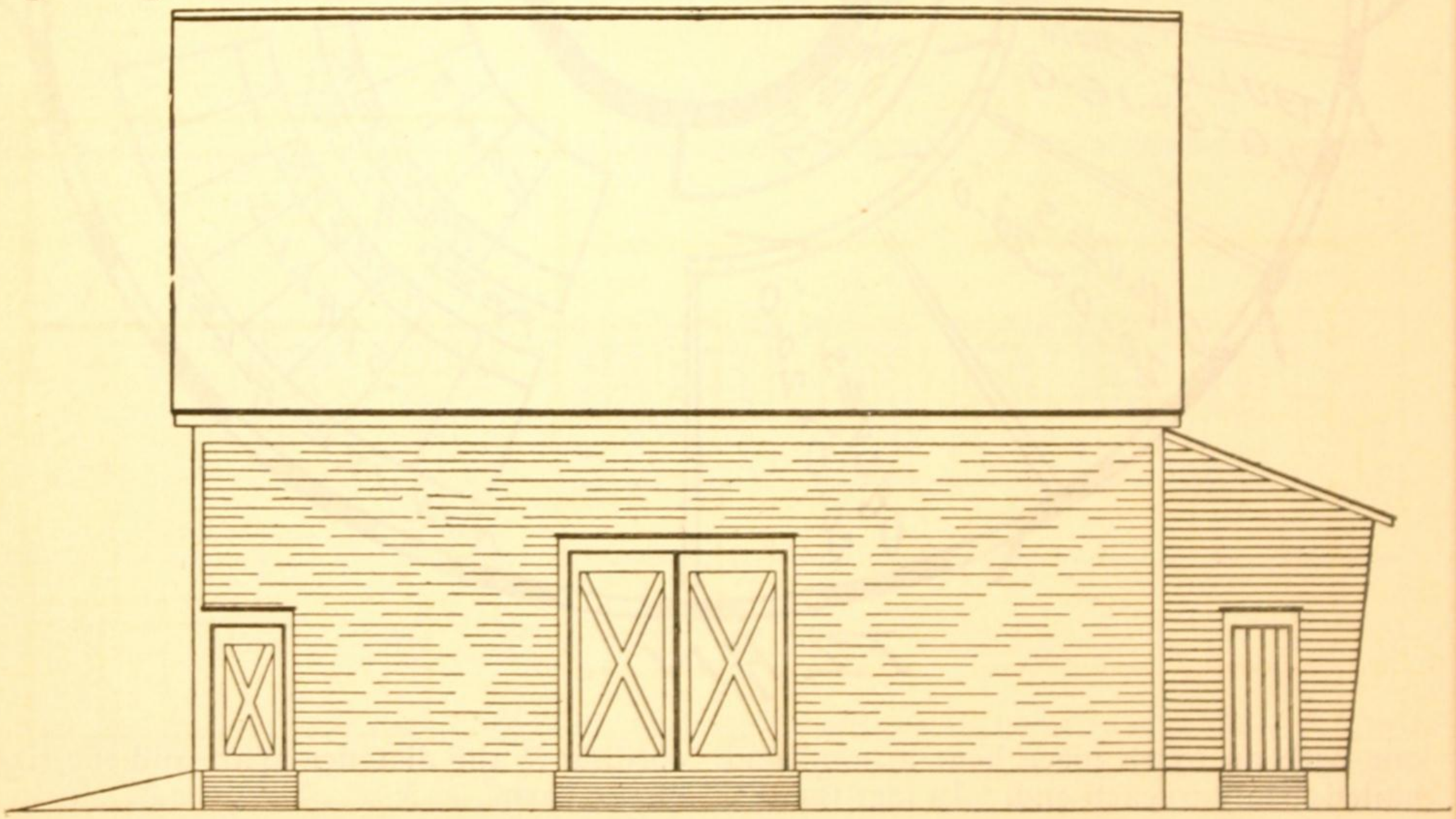
The roof is just as strong as the other construction with rafters all radiating from the silo to the eaves. The roof boards are put on in circles so that the roof is actually hooped, as well as the sides of the building. A cyclone might lift such a roof and roll it around the country like a cart wheel, but it would hardly break to pieces. Hay fork tracks in a round barn are suspended in circular form from a clear space left for the purpose, a little nearer the silo than the middle, because the mow grows deeper as you work towards the center.

In a round dairy barn the stalls are all built so the cows face together, which is convenient for removing the manure. A circular track for the manure carrier should extend all the way around the barn behind the cows to facilitate easy cleaning.

STORAGE BARN WITH DAIRY STABLE WING—A136

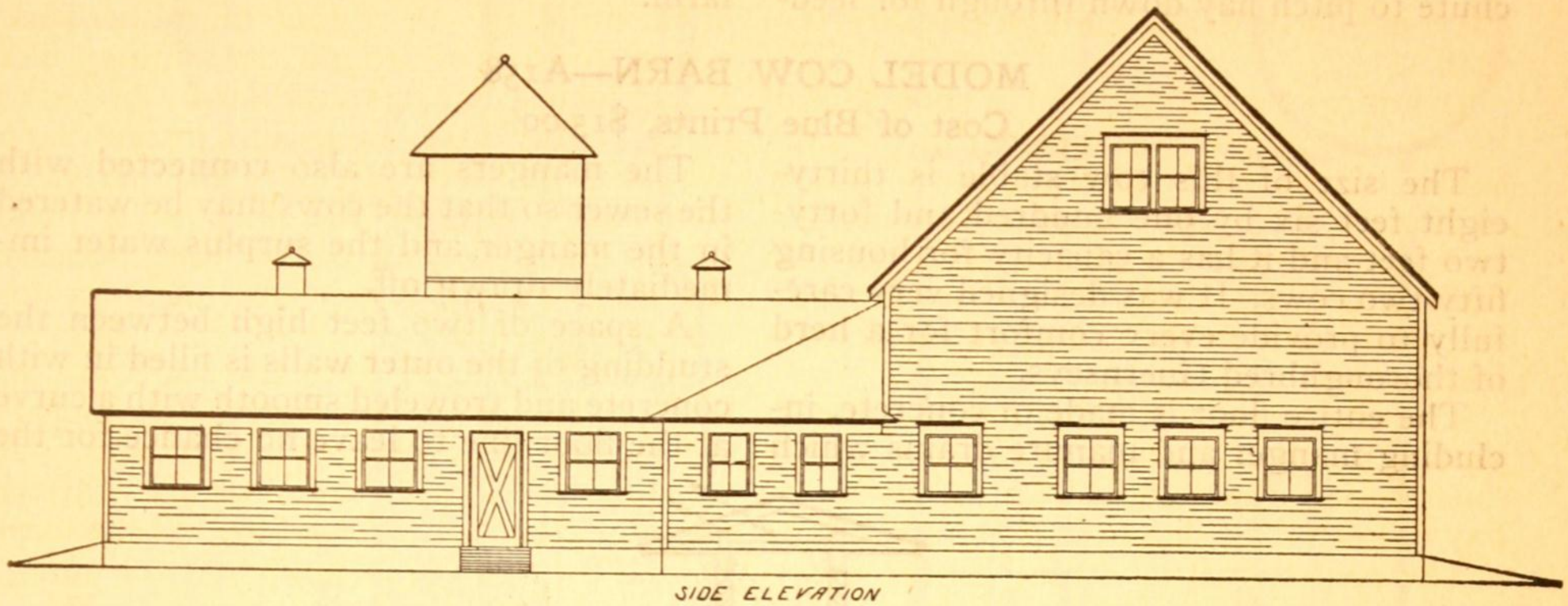
Cost of Blue Prints, $15.00

A great many dairymen object to having storage of any kind over a cow stable. There is more or less dust from the mows, and the dust is objectionable for several reasons. But it is impossible to keep cows profitably unless the rough feed and straw may be reached easily. Labor is so expensive that even the steps necessary while feeding must be counted and reckoned in the cost. If there is no storage over the



FRONT ELEVATION CORN CRIB

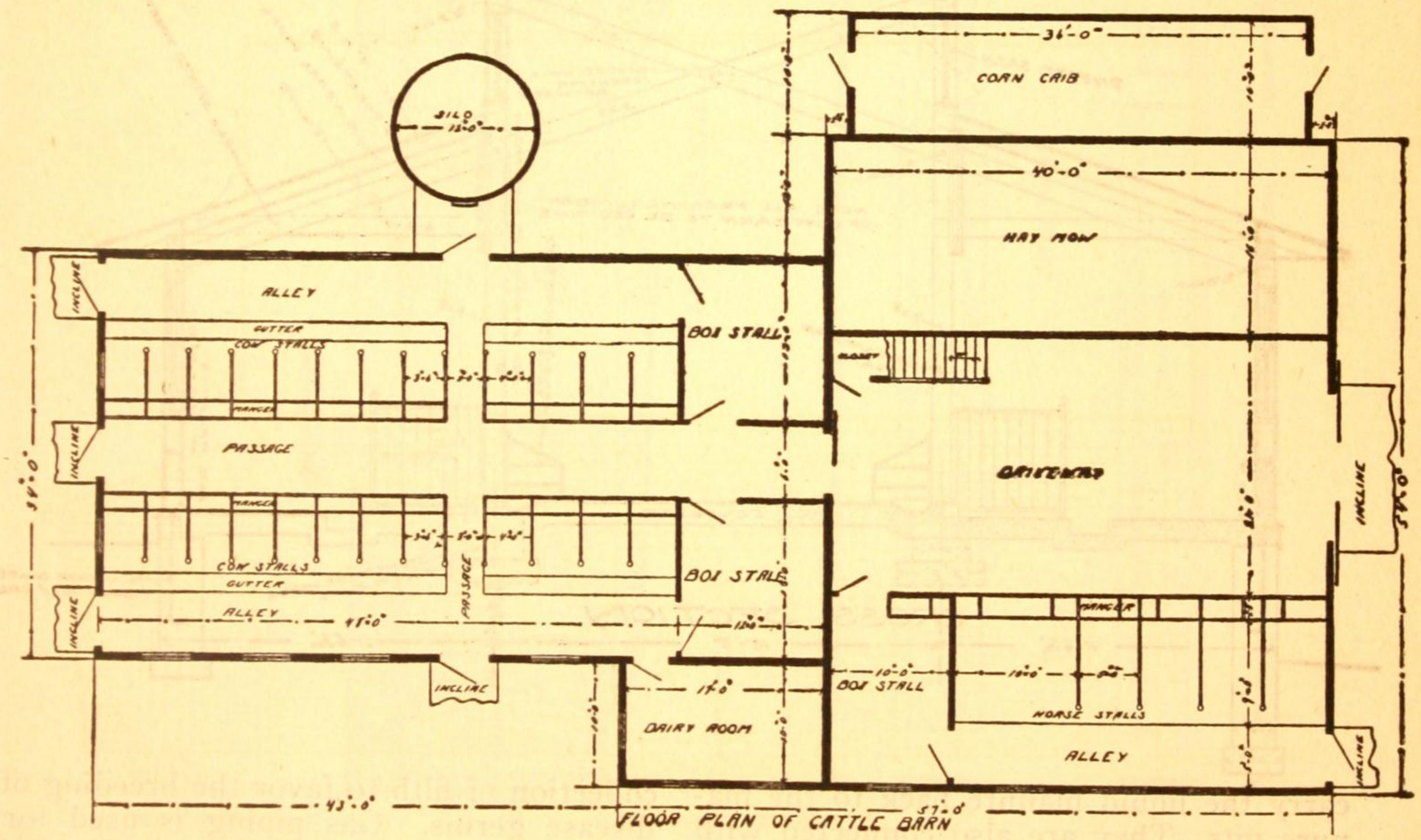
cows there must be storage near by. The silo in this plan is placed at the side about midway along the length of the stable for easy feeding. This position also makes it easy to get the green cut stalks into the silo at filling time.



SIDE ELEVATION

Not much corn is fed to dairy cows, but the crib is not far away from either cows or horses. A dairy room ten by seventeen feet is built in the corner next to the storage barn easily accessible to the stable. It would not be necessary to have a door at the outer end of the feed alley, but it is very handy in the summer time if green feed is fed to the cows in the stable.

In the storage barn the hay mow reaches from the ground to the roof. For comfort in cold weather it is better to board up the side of this mow to the floor over the driveway. It is necessary to have



an opening through the floor over the driveway to use a hay fork. The opening may be boarded around and used as a chute to pitch hay down through for feeding, but such details must depend to a great extent upon the kind of farming carried on and the other buildings on the farm.

MODEL COW BARN—A158

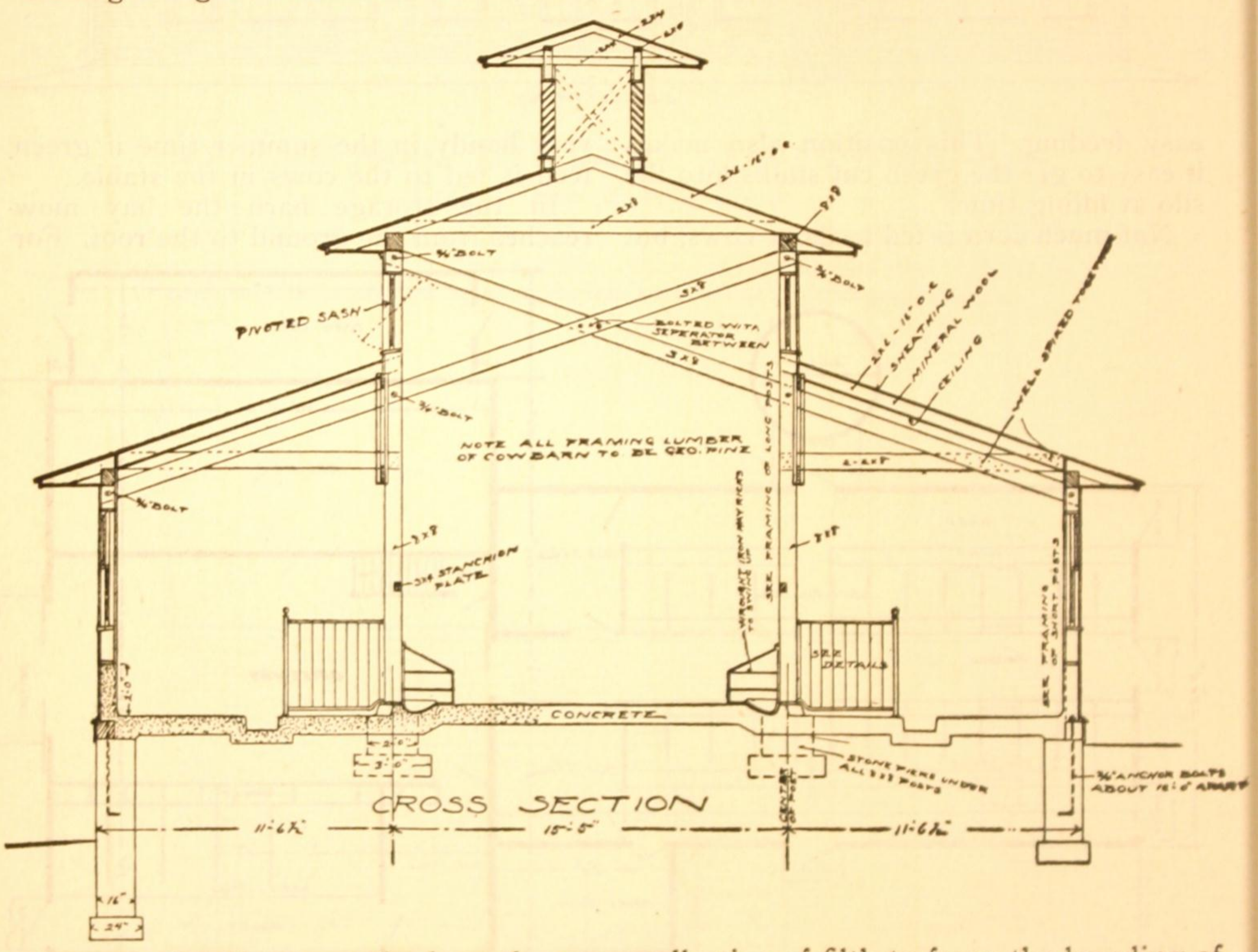
Cost of Blue Prints, $15.00

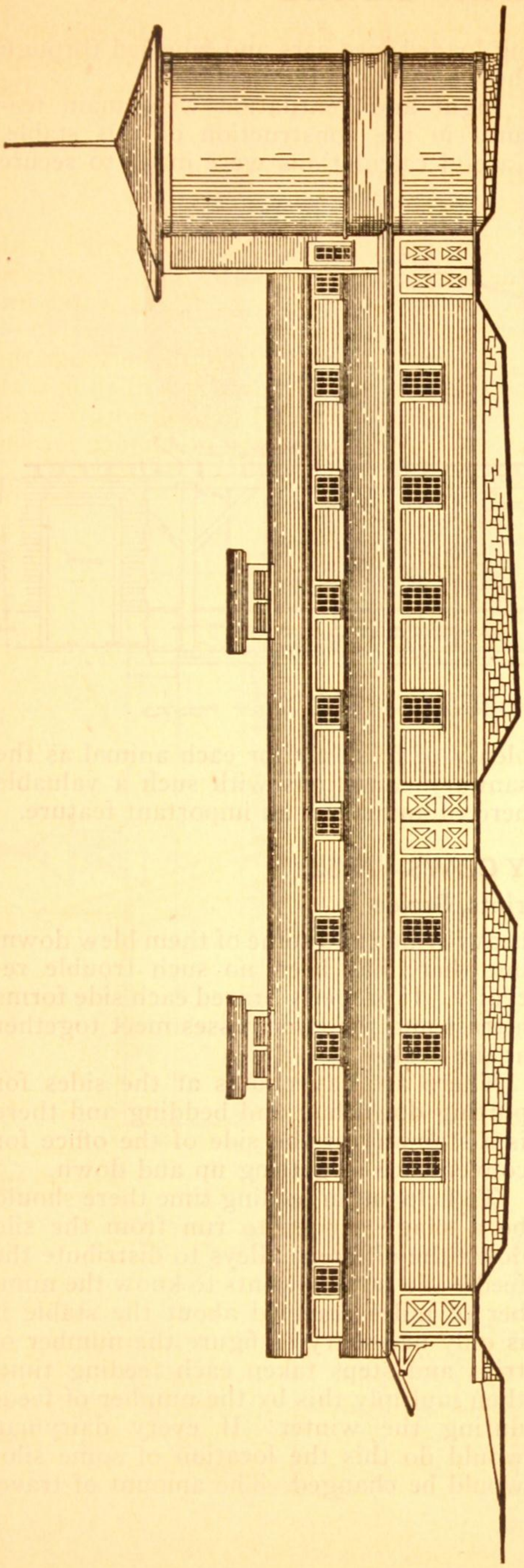
The size of this cow stable is thirty-eight feet six by one hundred and forty-two feet and it has a capacity for housing fifty-two cows. It was designed very carefully to provide every comfort for a herd of thoroughbred Guernseys.

The entire floor is made of concrete, including manger and manure drains which carry the liquid manure back to the manure pits. They are also connected with the sewer drain so that the wash water from flooding the floors can be carried away to a safe distance.

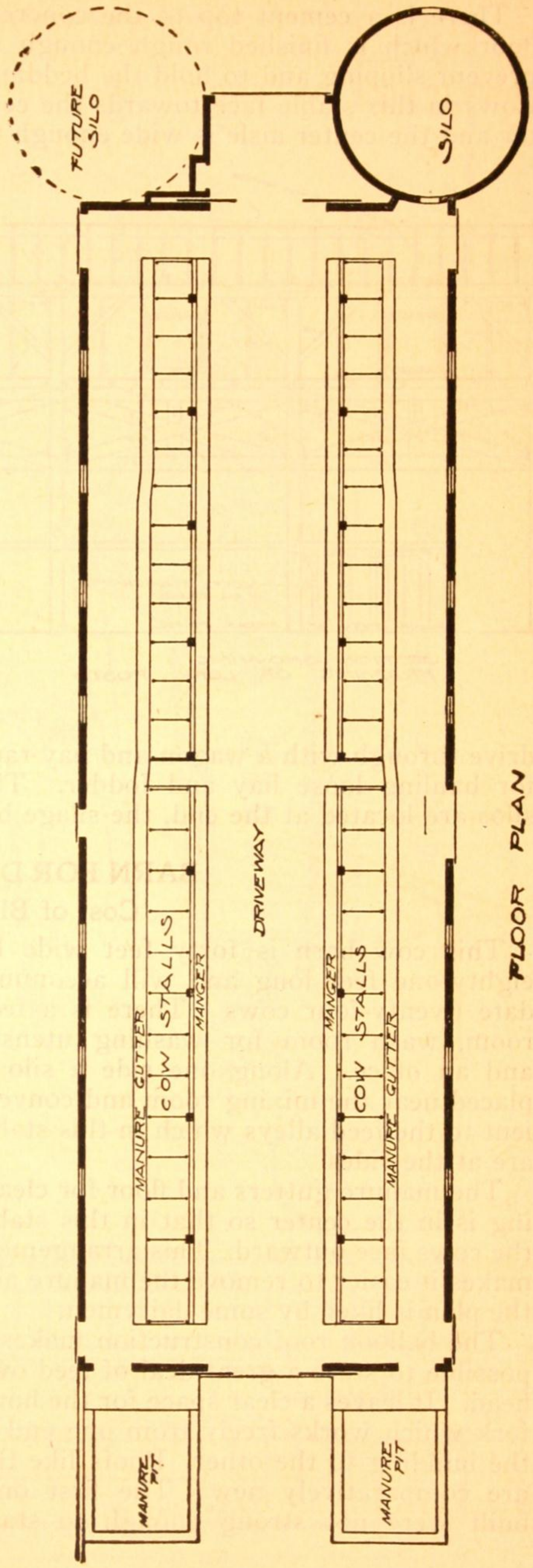
The mangers are also connected with the sewer so that the cows may be watered in the manger and the surplus water immediately drawn off.

A space of two feet high between the studding of the outer walls is filled in with concrete and troweled smooth with a curve at the floor line to leave no chance for the collection of filth to favor the breeding of disease germs. Gas piping is used for stalls set firmly in the cement. Each stall is finished with individual wrought iron hay racks made to swing up.





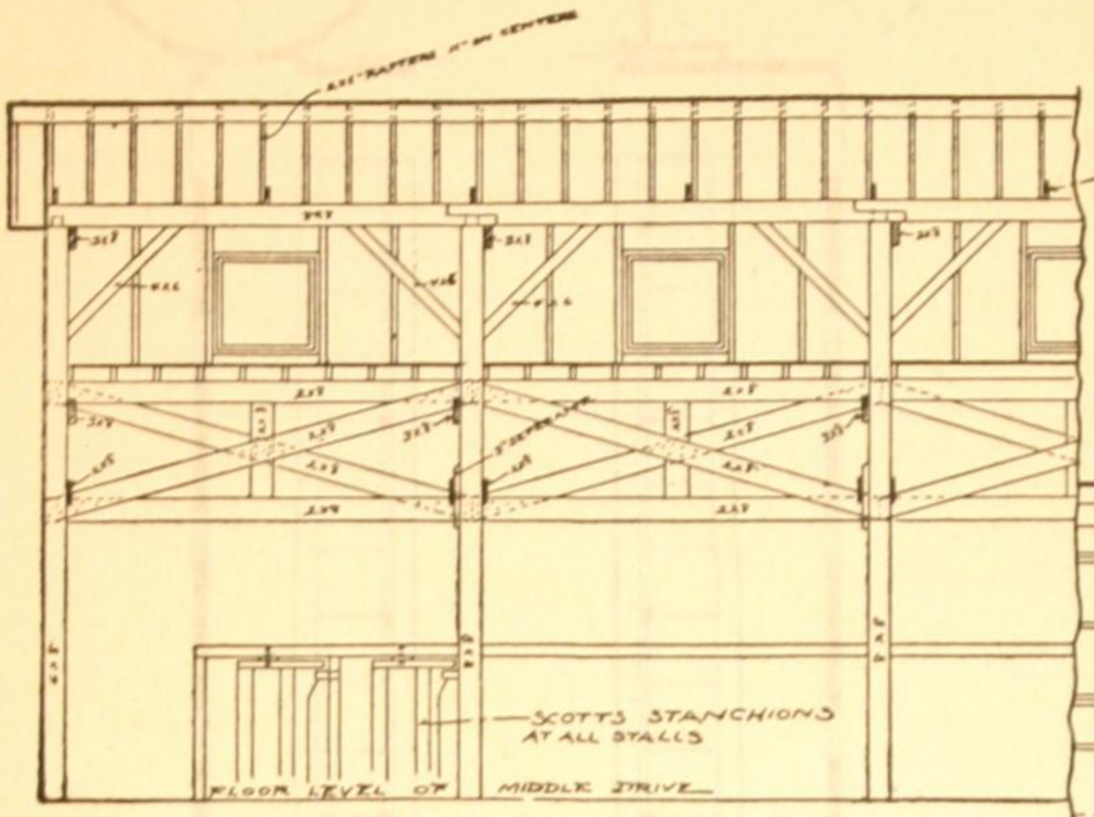
SIDE ELEVATION



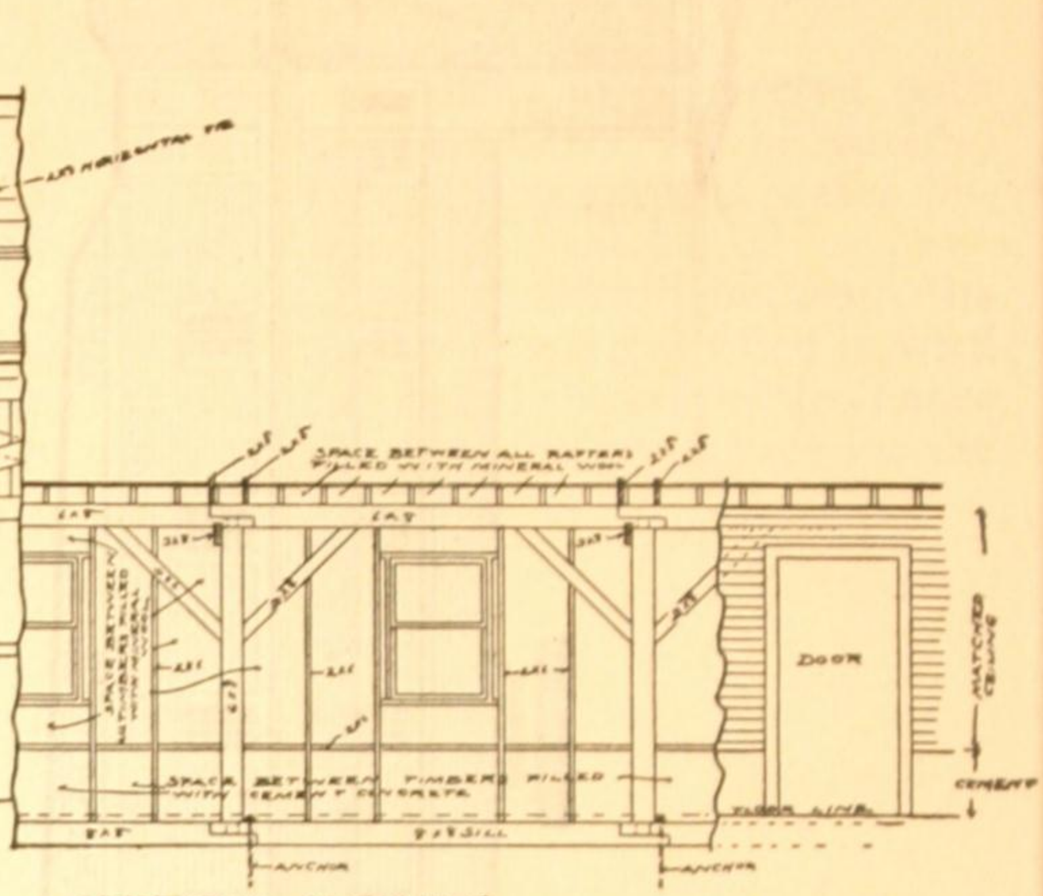
FLOOR PLAN

There is a cement top to the concrete floor which is finished rough enough to prevent slipping and to hold the bedding. Cows in this stable face towards the center and the center aisle is wide enough to drive through with a wagon and hay-rack for hauling loose hay and fodder. The silos are located at the end, the silage being loaded into cars and wheeled through the feed alley to the mangers.

Light and ventilation were main features in the construction of this stable. Careful calculations were made to secure plenty of fresh air for each animal as the sanitary conditions with such a valuable herd of animals is an important feature.



SECTION SHOWING FRAMING OF LONG POSTS



SECTION SHOWING FRAMING OF SHORT POSTS.

BARN FOR DAIRY COWS—A162

Cost of Blue Prints, $10.00

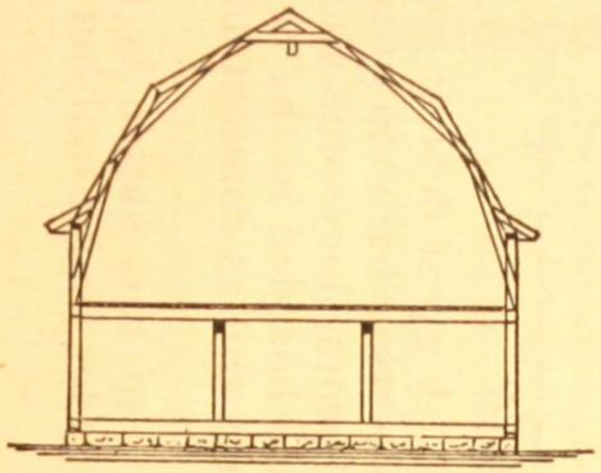
This cow barn is forty feet wide by eighty-one feet long and will accommodate twenty-four cows. There is a feed room, wash room for washing utensils and an office. Along one side a silo is placed near the mixing room and convenient to the feed alleys which in this stable are at the sides.

The manure gutters and floor for cleaning is in the center so that in this stable the cows face outward. This arrangement makes it easier to remove the manure and the plan is liked by some dairymen.

The balloon roof construction makes it possible to store a great deal of feed over head. It leaves a clear space for the horse fork which works freely from one end of the building to the other. Roofs like this are comparatively new. The first ones built were not strong enough to stand heavy winds and some of them blew down, but there has been no such trouble recently. If properly braced each side forms a truss and the two trusses meet together at the peak.

There are hay chutes at the sides for putting down hay and bedding and there is a stairway at the side of the office for convenience in getting up and down.

To help out in feeding time there should be a silage carrier to run from the silo down the different alleys to distribute the feed. If a farmer wants to know the number of miles traveled about the stable it is only necessary to figure the number of trips and steps taken each feeding time, then multiply this by the number of feeds during the winter. If every dairyman would do this the location of some silos would be changed. The amount of travel



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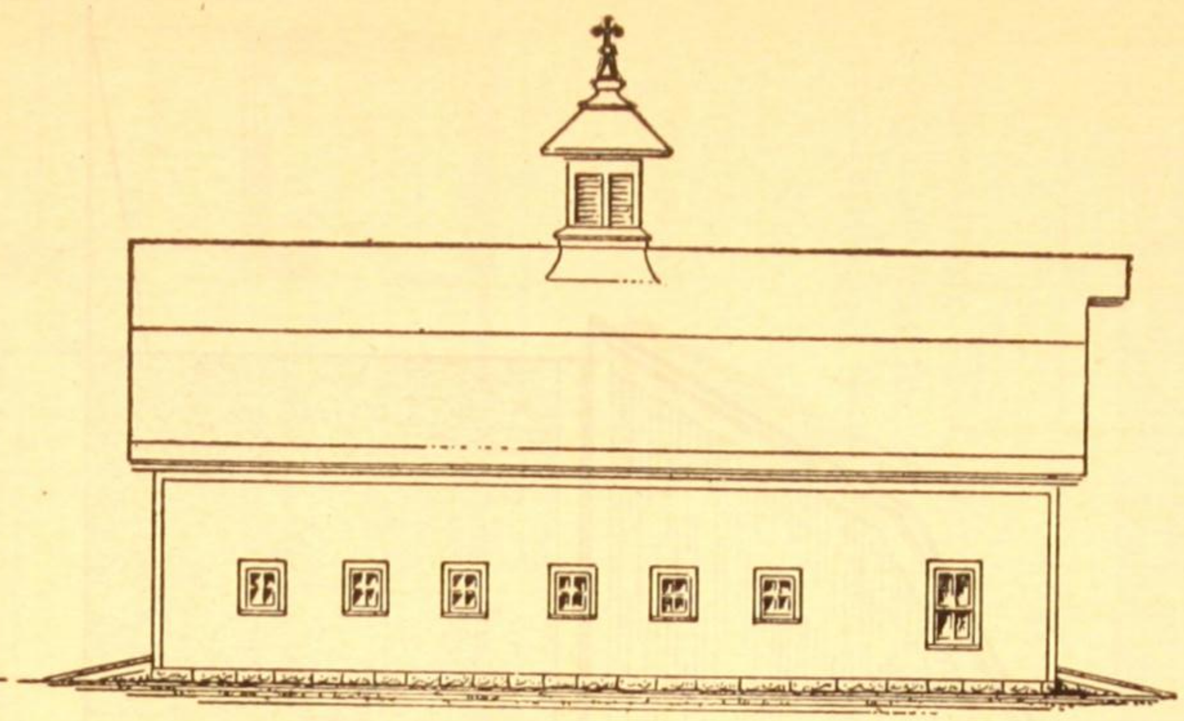
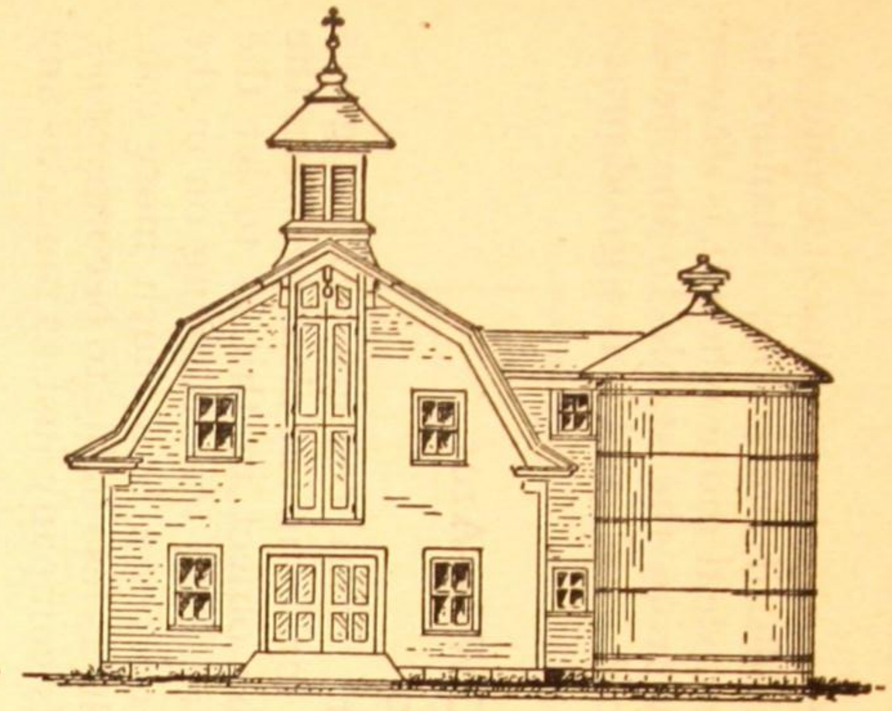
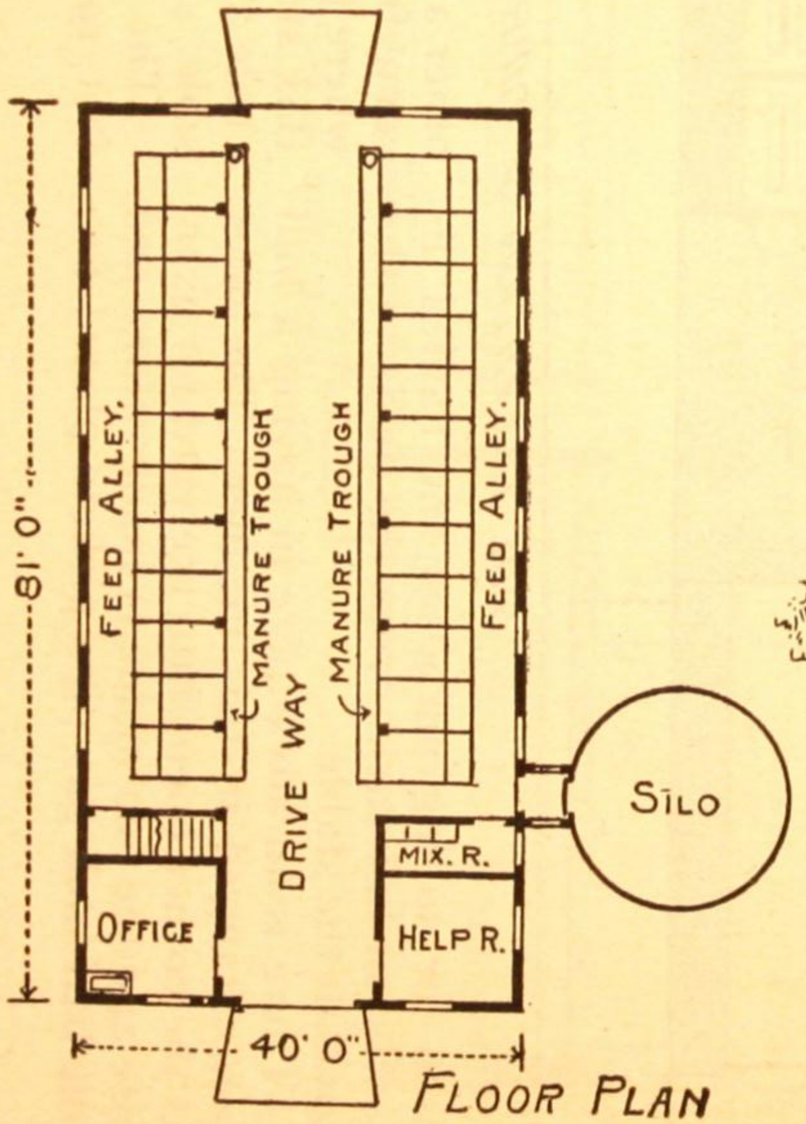


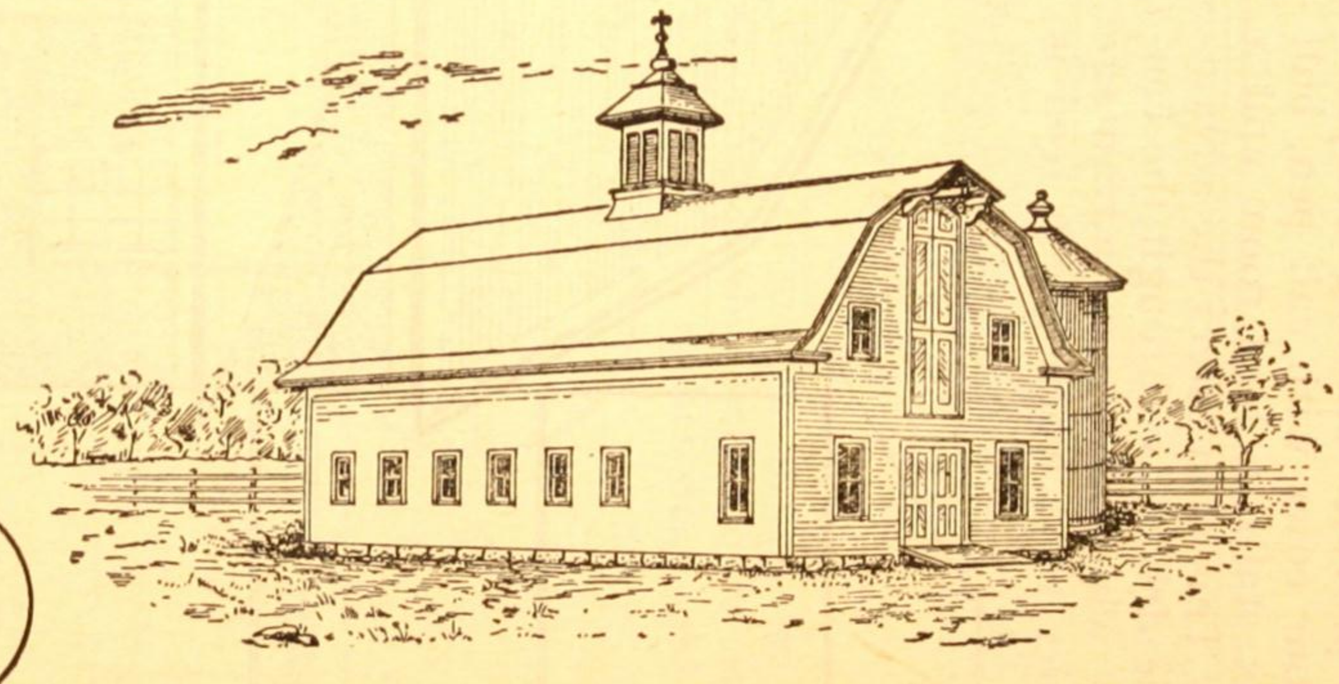
SIDE ELEVATION.



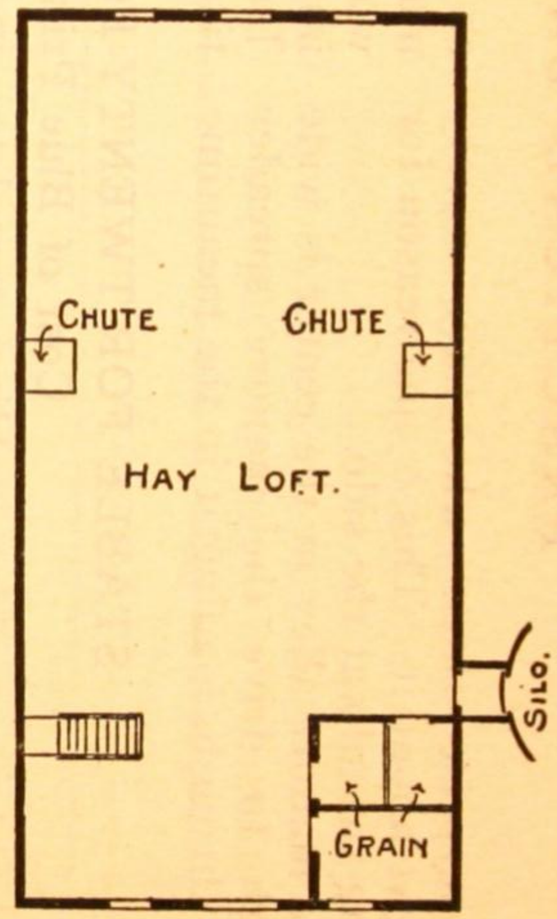
FRONT ELEVATION.



FLOOR PLAN



A. BARN FOR DAIRY COWS.



LOFT PLAN.

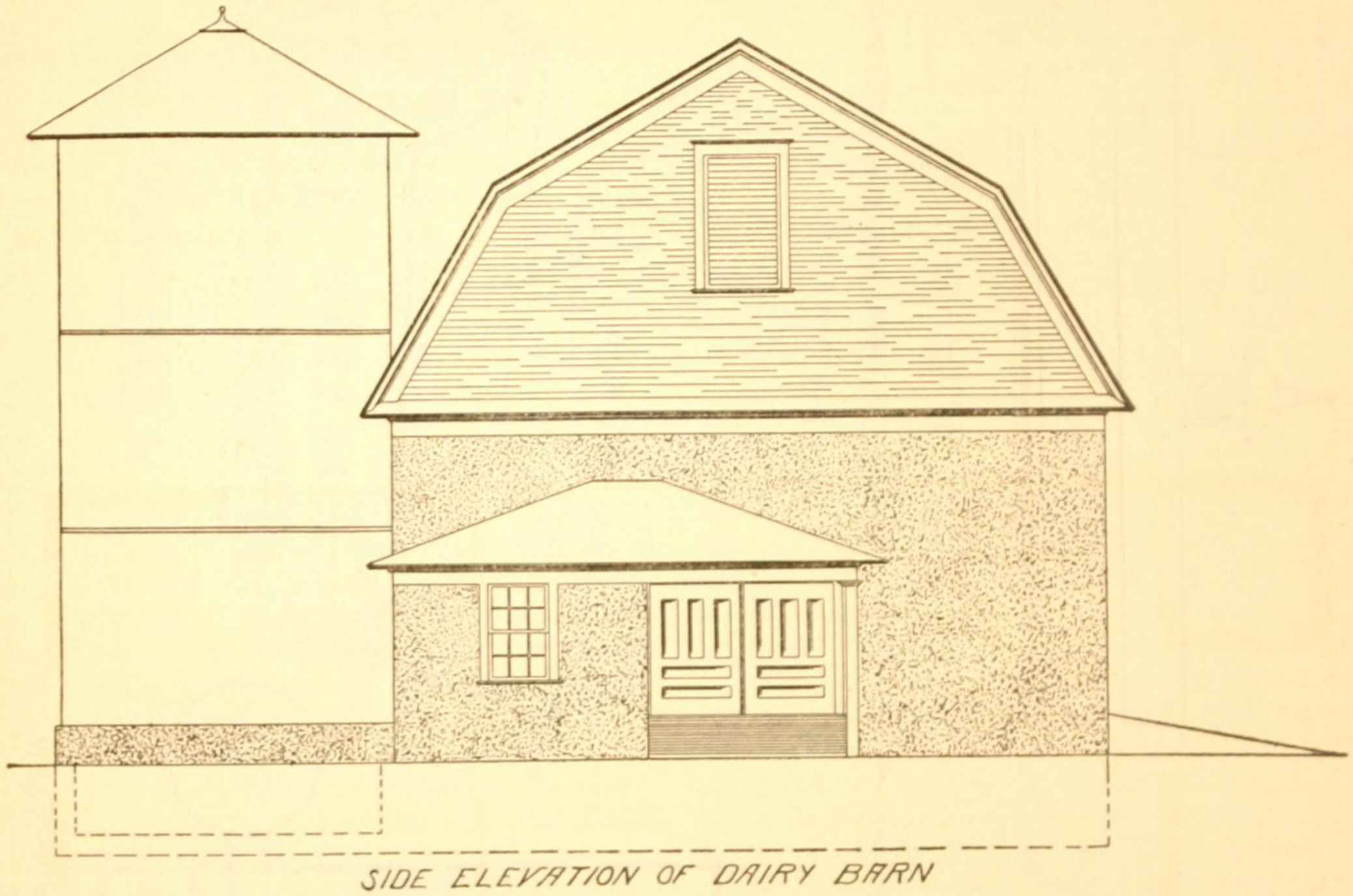
will surprise those who have never thought about it. This is one reason for placing the silo at the side.

The manure alley in the center is wide enough to drive the manure spreader right through, loading it in the meantime so it is not necessary to have a pile of manure outside of the stable. Manure is worth a great deal more when it is drawn immediately from the stable to the field. This barn looks well and it is a good practical barn.

STABLE FOR TWENTY-FOUR COWS—A101

Cost of Blue Prints, $15.00

This plan provides stabling complete for twenty-four cows with calf pen, bull pen, two box stalls, a feed room and a wash room. This plan offers the advantage of a wide driveway through the center feed alley which is a great advantage in the summer time when green feed is used for soiling purposes and hauled directly on hay-racks from the fields to the cows in the stable.

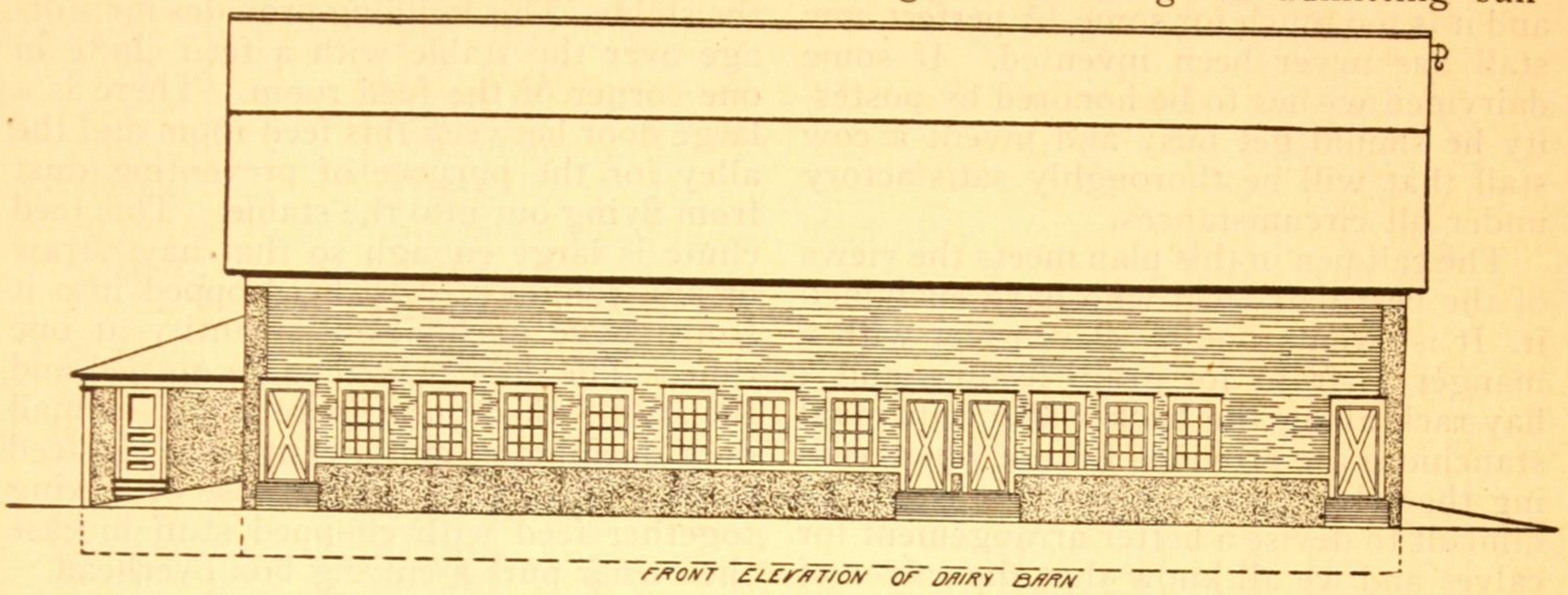


SIDE ELEVATION OF DAIRY BARN

There is an advantage in having a bull pen arranged in this manner. The door at the corner opens into the yard for exercise and the pen inside is made of one and one-half inch gas pipe pickets placed five inches apart from centers. This gives about three inches in the clear between the pickets. The object in this is to let the bull see everything that is going on in the stable. It makes a bull much more contented and he is less liable to become cross. A bull needs company just as much as any other animal. A great deal of trouble has come from shutting bulls up in tight pens where they become lonesome and morose. Box stalls are boarded to the ceiling and made as warm and as comfortable as possible.

The width of this stable is thirty-six feet, rather wider than usual but it allows

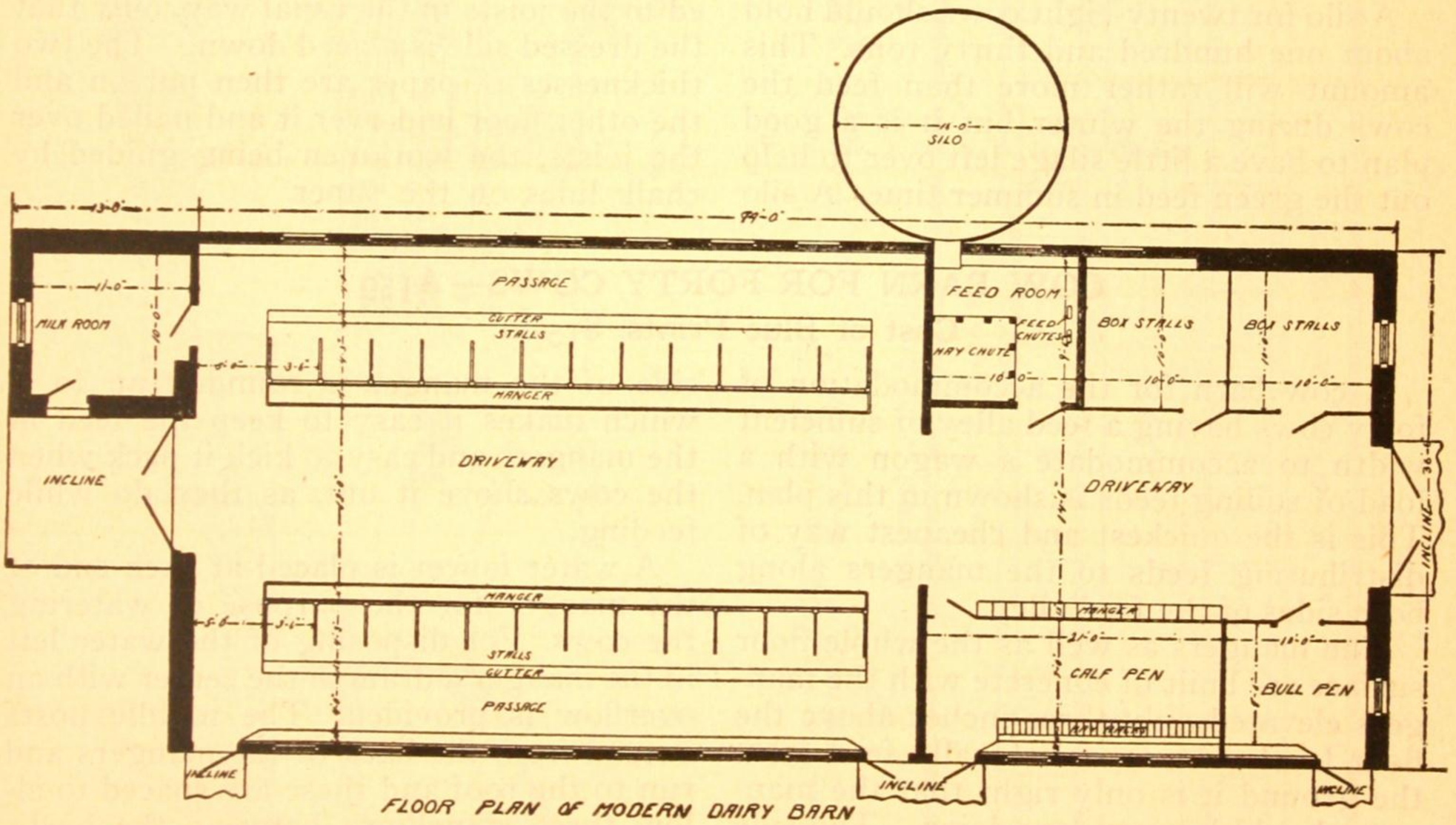
ample room for the driveway in the center and a good passageway behind the cows besides giving room enough to place the feed room, box stalls and other pens on opposite sides of the driveway in one end



FRONT ELEVATION OF DAIRY BARN

of the stable. The length of the building is eighty-four feet, but of course it could be extended if more room is desired without altering the width or the general plan.

Placing the silo near the middle of the building saves carrying the silage more than fifty feet which is a great saving of steps at feeding time. One great advantage with this stable is the number of windows. The windows extend from the ceiling to within three feet of the floor which is a great advantage in admitting sunshine. The manger in this stable is placed two inches above the floor. It is two feet wide and six inches deep and the bottom is slightly rounded. Three feet six inches are allowed for the width of the stalls with a standing floor four feet ten inches. Of course both the length and width of the



FLOOR PLAN OF MODERN DAIRY BARN

stalls should be made to fit the cows. For an extra large Holstein a four foot stall with a five foot length may not be too much but four feet ten inches by three and one-half feet is big enough for most cows and it is too much for some. A perfect cow stall has never been invented. If some dairymen wishes to be honored by posterity he should get busy and invent a cow stall that will be thoroughly satisfactory under all circumstances.

The calf pen in this plan meets the views of the best dairymen who have examined it. It is twenty-one by eleven feet with a manger in front for grain feeding and a hay-rack along the back wall. Individual stanchions are provided for use when feeding the calves grain or milk. It would be difficult to devise a better arrangement for calves and we all know that the calves of this year are the cows of two years hence and the value of the cow depends on the quality of the calf and the feed and care given it.

A silo for twenty-eight cows should hold about one hundred and thirty tons. This amount will rather more than feed the cows during the winter but it is a good plan to have a little silage left over to help out the green feed in summer time. A silo sixteen feet in diameter and thirty-two feet high is very satisfactory.

The milk room is not exactly separate but it is built on the front and there are two spring doors to shut out the odors of the stable. This building provides for storage over the stable with a feed chute in one corner of the feed room. There is a large door between this feed room and the alley for the purpose of preventing dust from flying out into the stable. This feed chute is large enough so that hay, straw or any roughage may be dropped into it from above in sufficient quantity at one time. The door may then be opened and the stuff forked out. There is also a small door opening from the chute into the feed room. This is for the purpose of mixing together feed with chopped stuff in case the owner puts a cutting box overhead.

Because of the storage room above, the upper floor is made double thickness with two thicknesses of paper between, matched flooring is used and the first course nailed to the joists in the usual way, only that the dressed side is placed down. The two thicknesses of paper are then put on and the other floor laid over it and nailed over the joists, the workmen being guided by chalk lines on the paper.

COW BARN FOR FORTY COWS—A159

Cost of Blue Prints, $15.00

A cow barn for the accommodation of forty cows having a feed alley of sufficient width to accommodate a wagon with a load of soiling feeds is shown in this plan. This is the quickest and cheapest way of distributing feeds to the mangers along both sides of the feed alley.

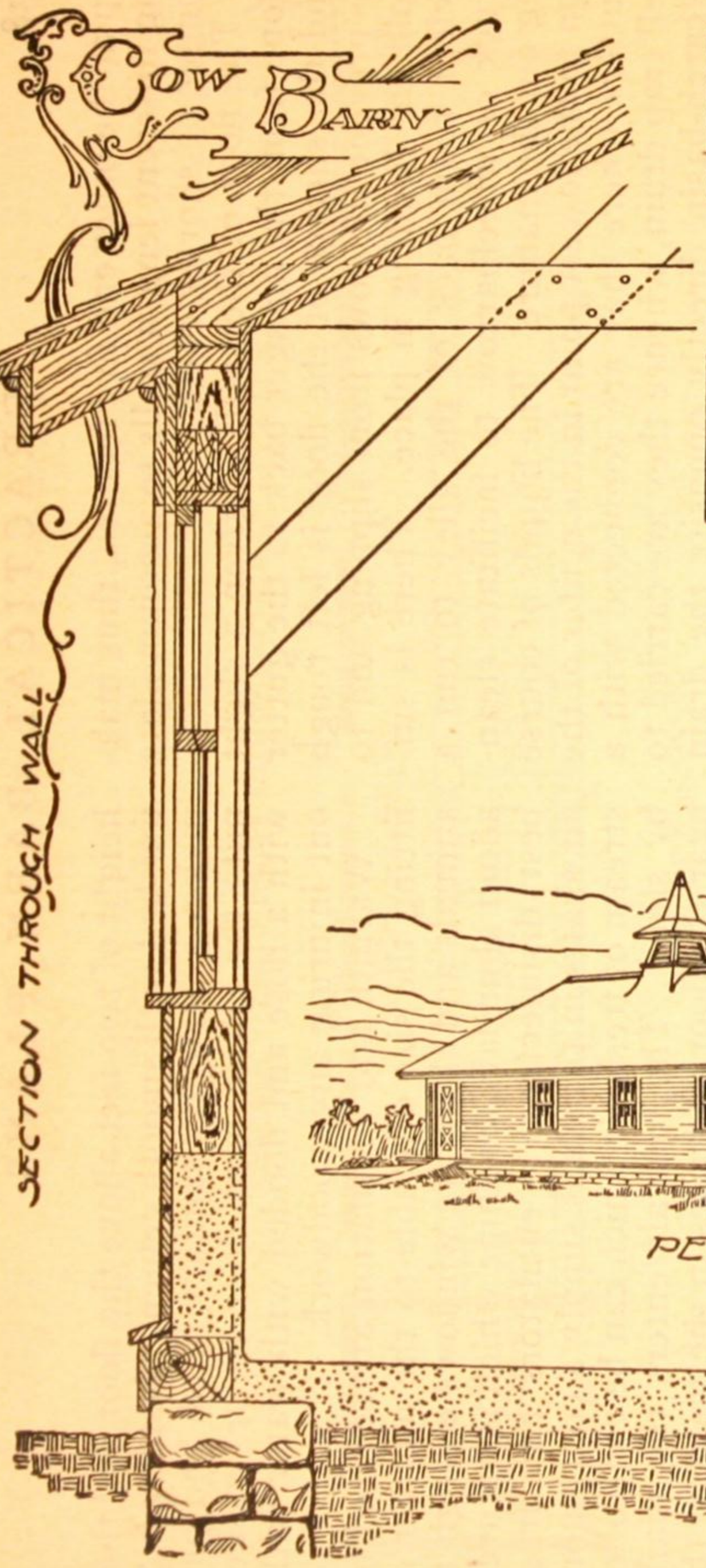
The mangers as well as the whole floor surface are built of concrete with the mangers elevated only three inches above the floor level. As cows naturally feed from the ground it is only right that the mangers should be very low down. The side of the manger nearest the cow is made almost perpendicular to prevent feed from working over amongst the bedding. But the feed alley floor is elevated and that side of the manger is rounded up to it which makes it easy to keep the feed in the mangers and easy to kick it back when the cows shove it out, as they do while feeding.

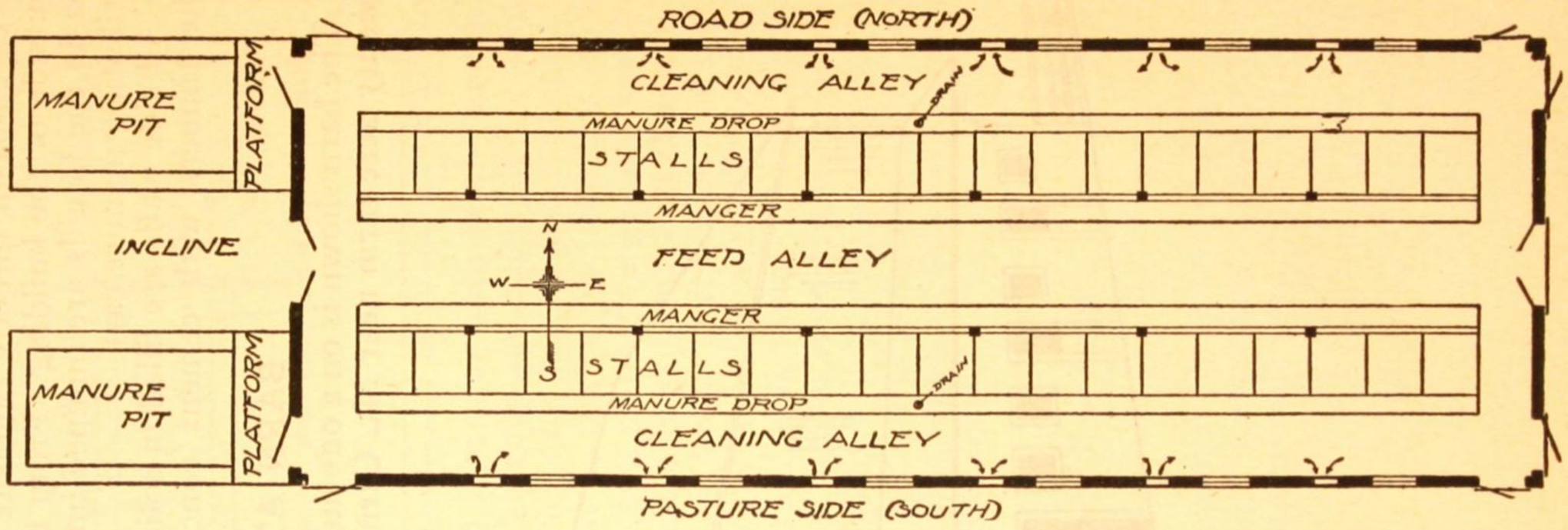
A water faucet is placed at each end of the manger for the purpose of watering the cows. For disposing of the water left in the manger a drain in the center with an overflow is provided. The middle posts extend from the back of the mangers and run to the roof and these are spaced to allow three stanchions between the posts.

A gutter sixteen inches wide and from five to eight inches deep is run diagonally behind the cows, starting at five feet four from the mangers at one end and finishing

PRACTICAL BARN PLANS

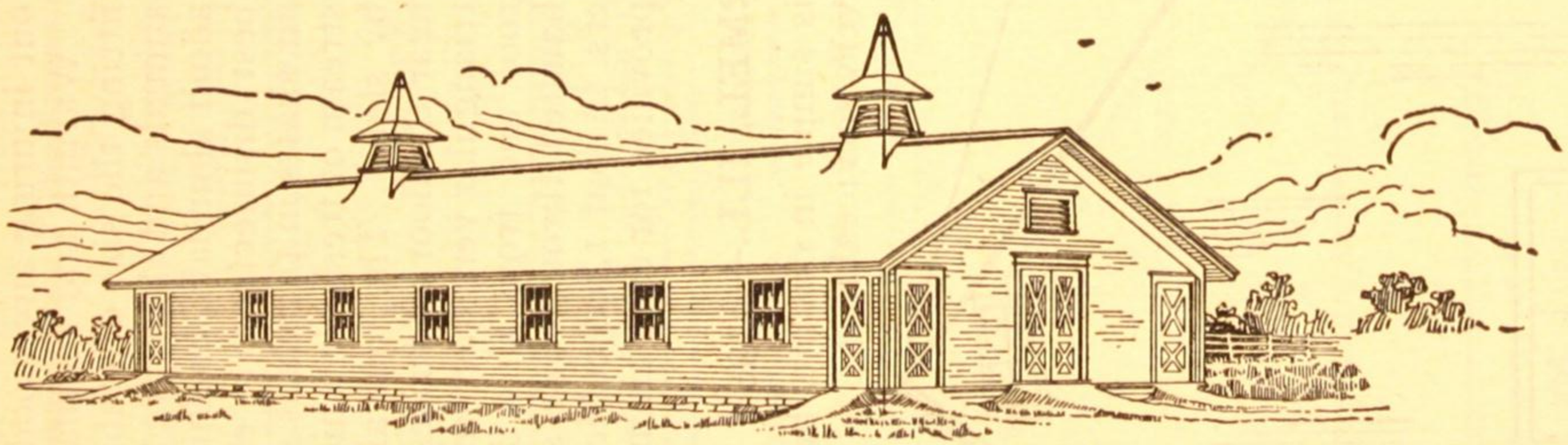
COW BARN



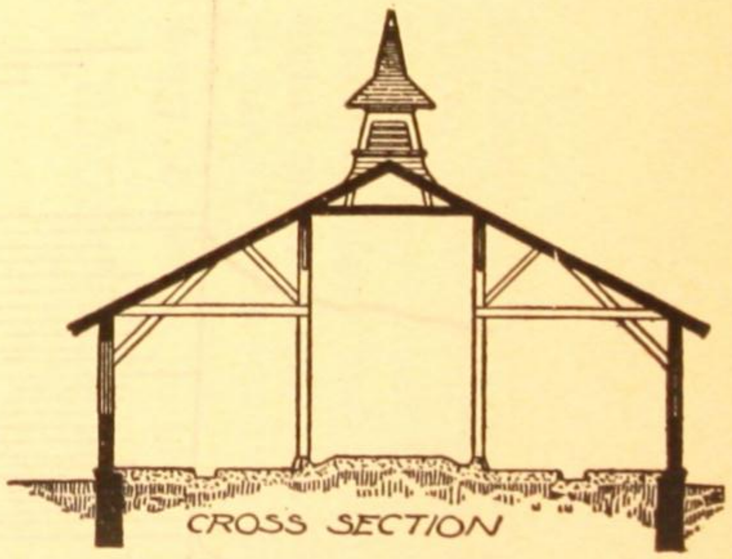


FLOOR PLAN

EXTERIOR DIMENSIONS
LENGTH 89 FT. WIDTH 32 FT.



PERSPECTIVE VIEW



CROSS SECTION

up at the other end five feet ten, thus making different length stalls to accommodate longer or shorter cows.

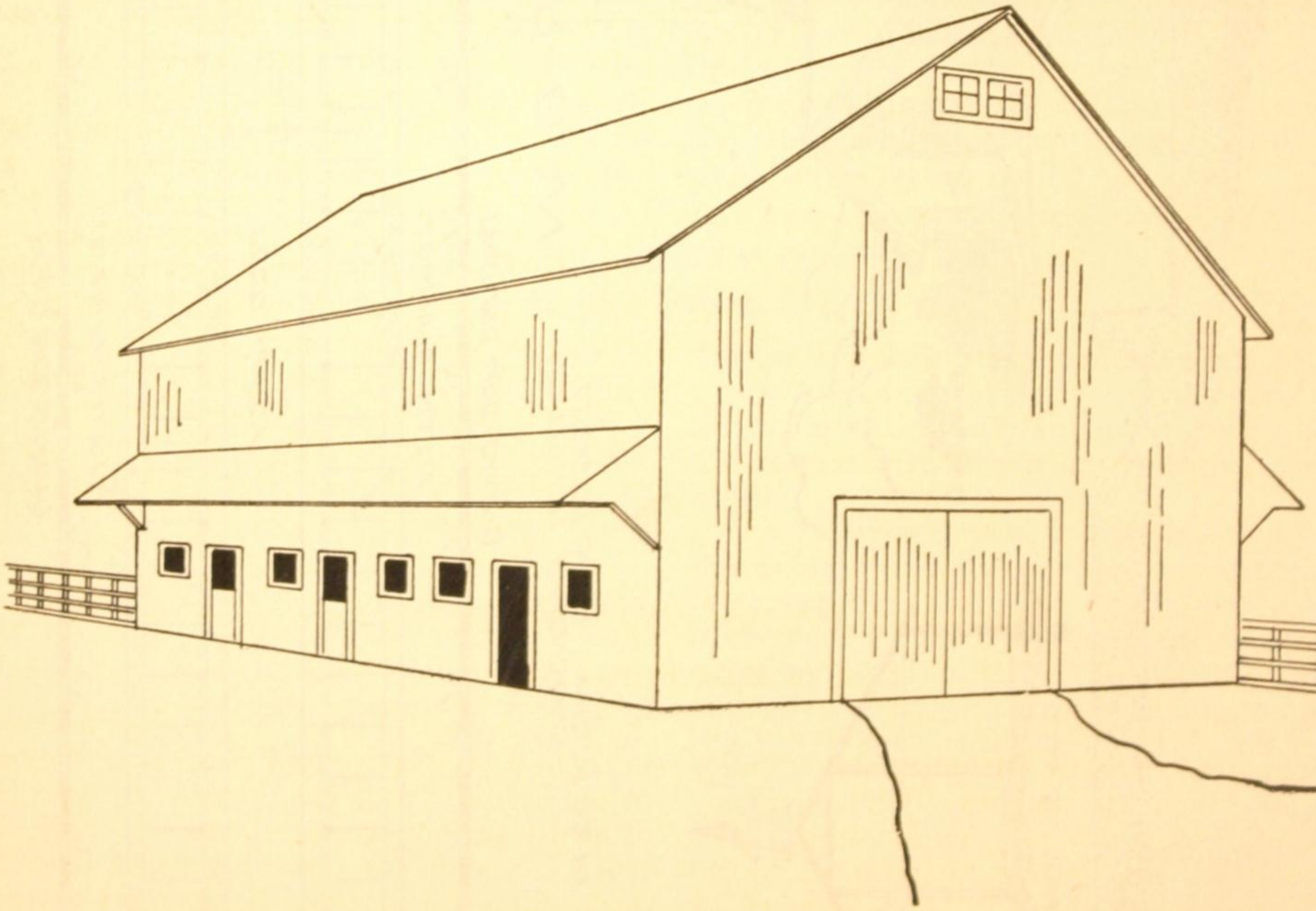
The floor of the stalls is given a slight slope from the manger back to the gutter and the surface of the floor is left rough to prevent the cows from slipping and to hold the bedding in place. There is sufficient room back of the alley to run a truck or wheelbarrow to facilitate cleaning out the manure. The liquids of course run to the lowest point in the center of the gutters where they are connected with a bell trap drain, whence they are carried to a catch-basin directly opposite the drain outside of the building. From this catch-basin the liquids are pumped into the distributing manure cart.

All side walls are filled in solid between the timbers with cement concrete to a height of two feet above the floor and then finished with smooth cement plaster which makes a perfectly sanitary finish and permits the entire barn floor to be washed with a hose and flooded with water without injuring any woodwork.

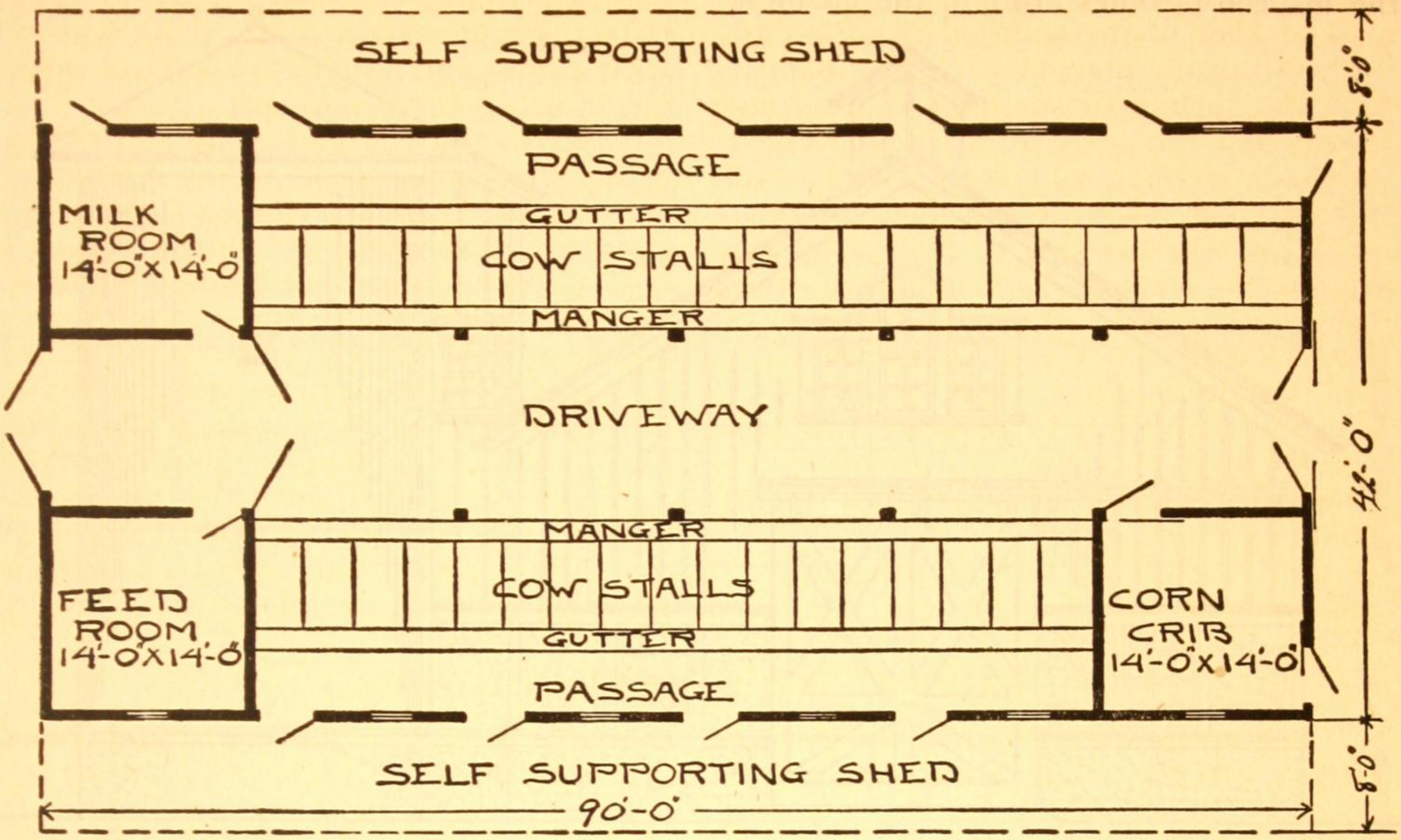
Warmth and ventilation are secured by fitting the size of stable to the number of animals and there are windows enough to admit abundant sunshine which is nature's best disinfectant. Ventilators and fresh air shafts in the walls supply a continuous stream of fresh air which can be controlled by slides. The foul air enters the shafts near the floor and rises in the walls to the triangular vent duct under the ridge of the roof and from this duct the air is exhausted through the slat ventilator towers. About 1,800 cubic feet of air space is provided for each animal.

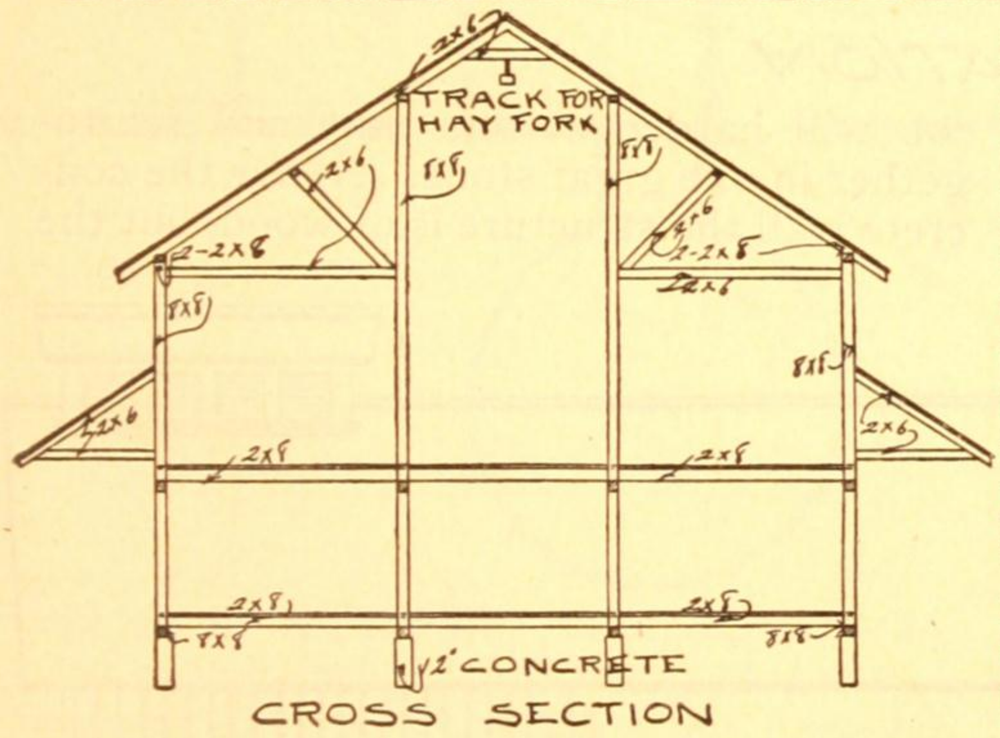
BARN AT MT. CARMEL, ILL.—A195

The barn shown is on a one hundred and twenty acre farm near Mt. Carmel, Ill. It is simple in outline, but commodious and very serviceable.



The foundation is of concrete which extends 7 ft. deep under east end of driveway forming a cellar 7x12x20 ft. in which are stored fruits, vegetables and perishable





CROSS SECTION

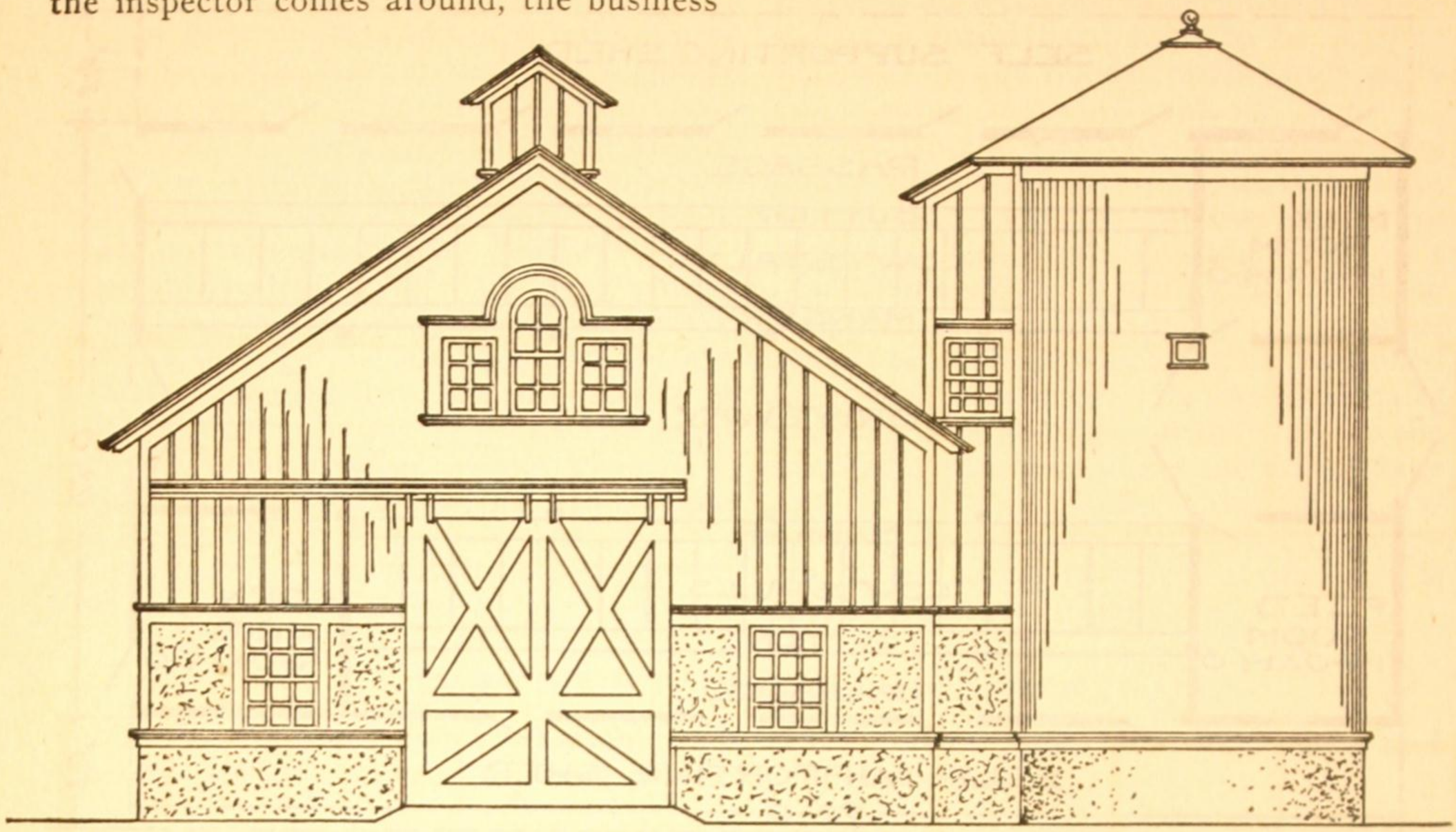
foods and feeds for both family and live stock. With rope-and-pulley device a barrel of apples or a bag of potatoes may be lowered in or drawn up from this cellar. Elevation and plans give general features of the structure, showing that the barn is intended to stable thirty-eight cows and there is provision for a small corn-crib, feed room and milk room. The idea is that later when the business grows to demand it these rooms will be removed to an outside building, or separate buildings, and the whole floor space of this barn given up to the stable proper.

TWENTY-FOUR COW STABLE—A210

Cost of Blue Prints, $15.00

It will be noticed that about one-third of the ground space of this dairy stable building is taken up with creamery, delivery room, feed room and work shop. The reason for this is that there must be no tinkering work done in the creamery or delivery room. These two compartments must be kept as pure and clean as possible, or the brand of milk required by the boards of health cannot be manufactured. Unless there is a shop for tinkering fitted with a desk and a cupboard to hang extra cloth-

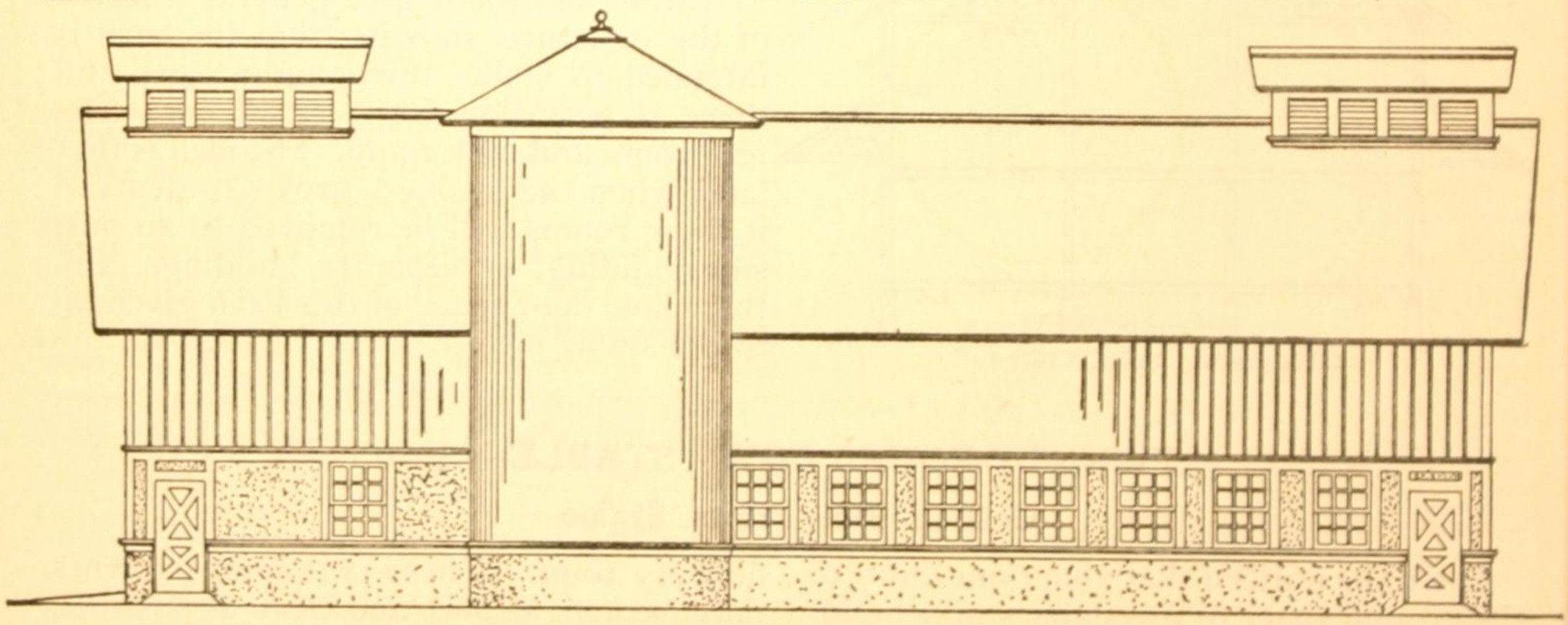
ing these things will accumulate in the creamery and delivery room. Then when the inspector comes around, the business being taken to use only the best materials and to put them together quickly so the



END ELEVATION

of that farmer is classed as second or third rate according to conditions as he finds them.

job will harden at one time and set together in one great stone. Above the concrete wall the structure is of wood, but the



SIDE ELEVATION

The wall and floor of this dairy barn is built all in one piece of cement, great care

lower story is plastered outside with cement. All windows are carefully fitted to

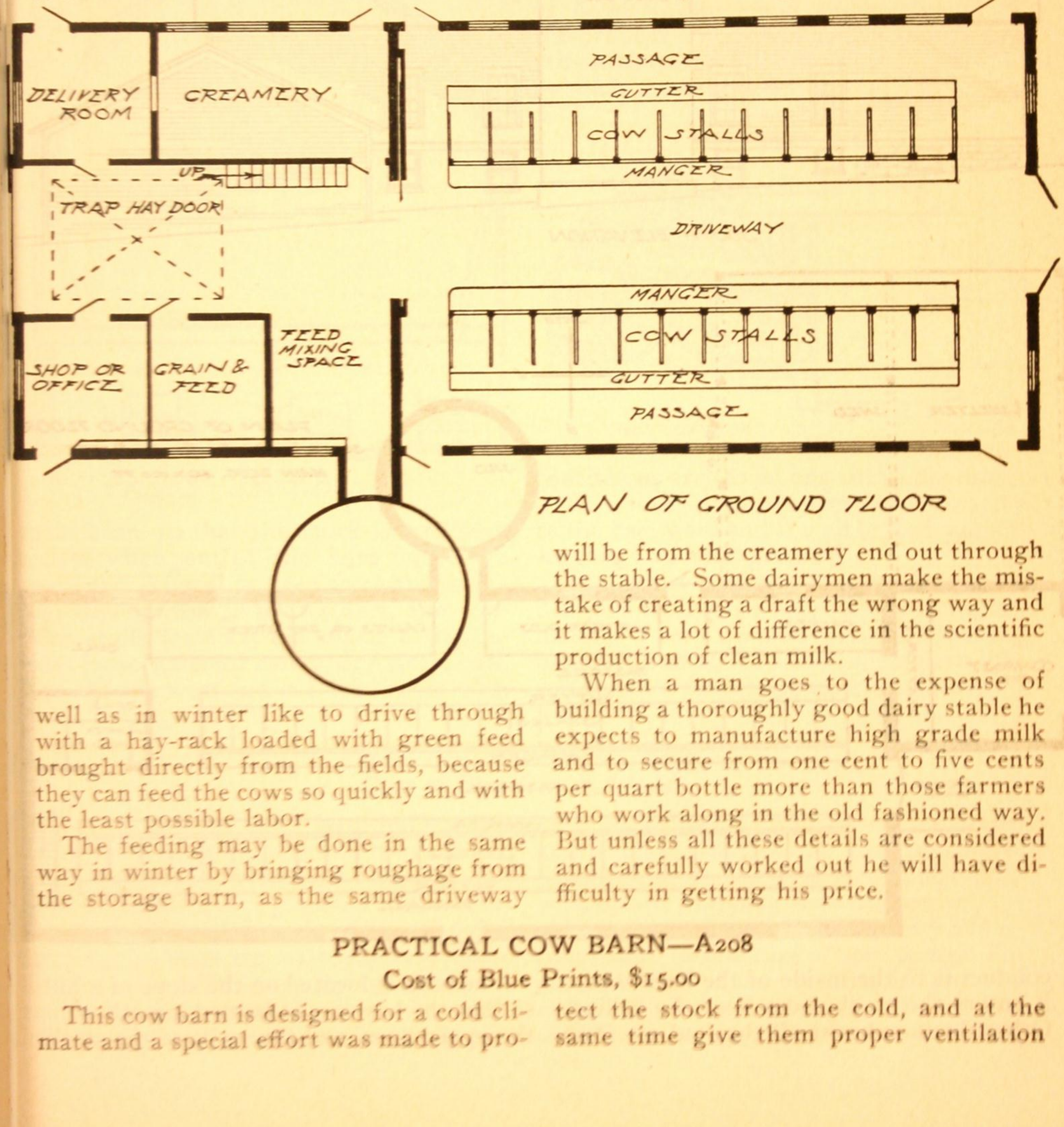
keep out the cold in winter and they are supposed to be kept clean at all times to let in plenty of light.

There is a difference of opinion among dairy farmers in regard to the center driveway between the mangers, some claiming that this space is greater than necessary and that it adds unnecessarily to the width and consequently to the cost of the building, but those dairymen who feed their cows in the stable in the summer time as well as in winter like to drive through with a hay-rack loaded with green feed brought directly from the fields, because they can feed the cows so quickly and with the least possible labor.

The feeding may be done in the same way in winter by bringing roughage from the storage barn, as the same driveway will accommodate a large feed box on wheels which may be pushed back and forth to the silo and feed mixing room.

Especial pains is taken with the partition between the cow stable proper and the creamery room. It is made solid and the door is carefully fitted and supplied with a spring to keep it shut in order to protect the milk from stable odors. Another important feature is to front the stable towards the prevailing winds so the draft will be from the creamery end out through the stable. Some dairymen make the mistake of creating a draft the wrong way and it makes a lot of difference in the scientific production of clean milk.

When a man goes to the expense of building a thoroughly good dairy stable he expects to manufacture high grade milk and to secure from one cent to five cents per quart bottle more than those farmers who work along in the old fashioned way. But unless all these details are considered and carefully worked out he will have difficulty in getting his price.



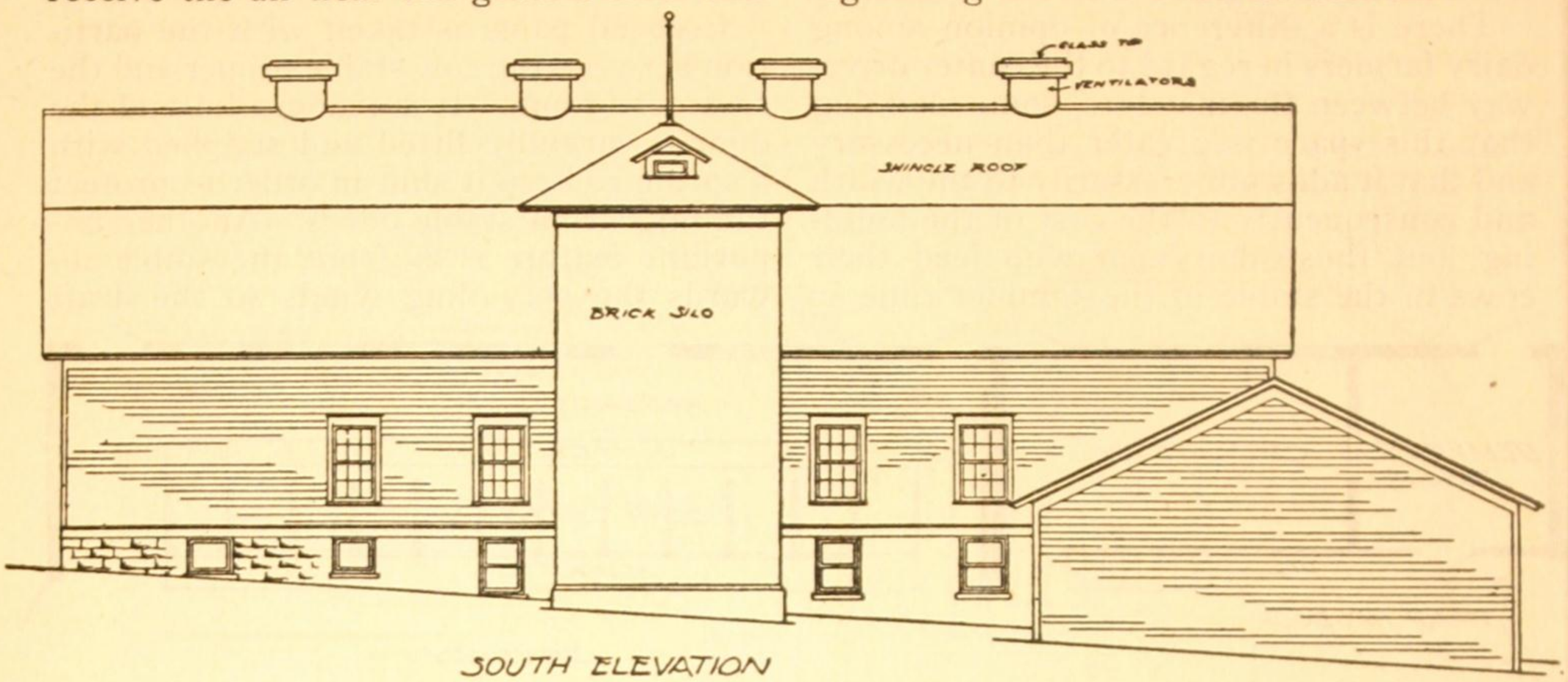
PLAN OF GROUND FLOOR

PRACTICAL COW BARN—A208

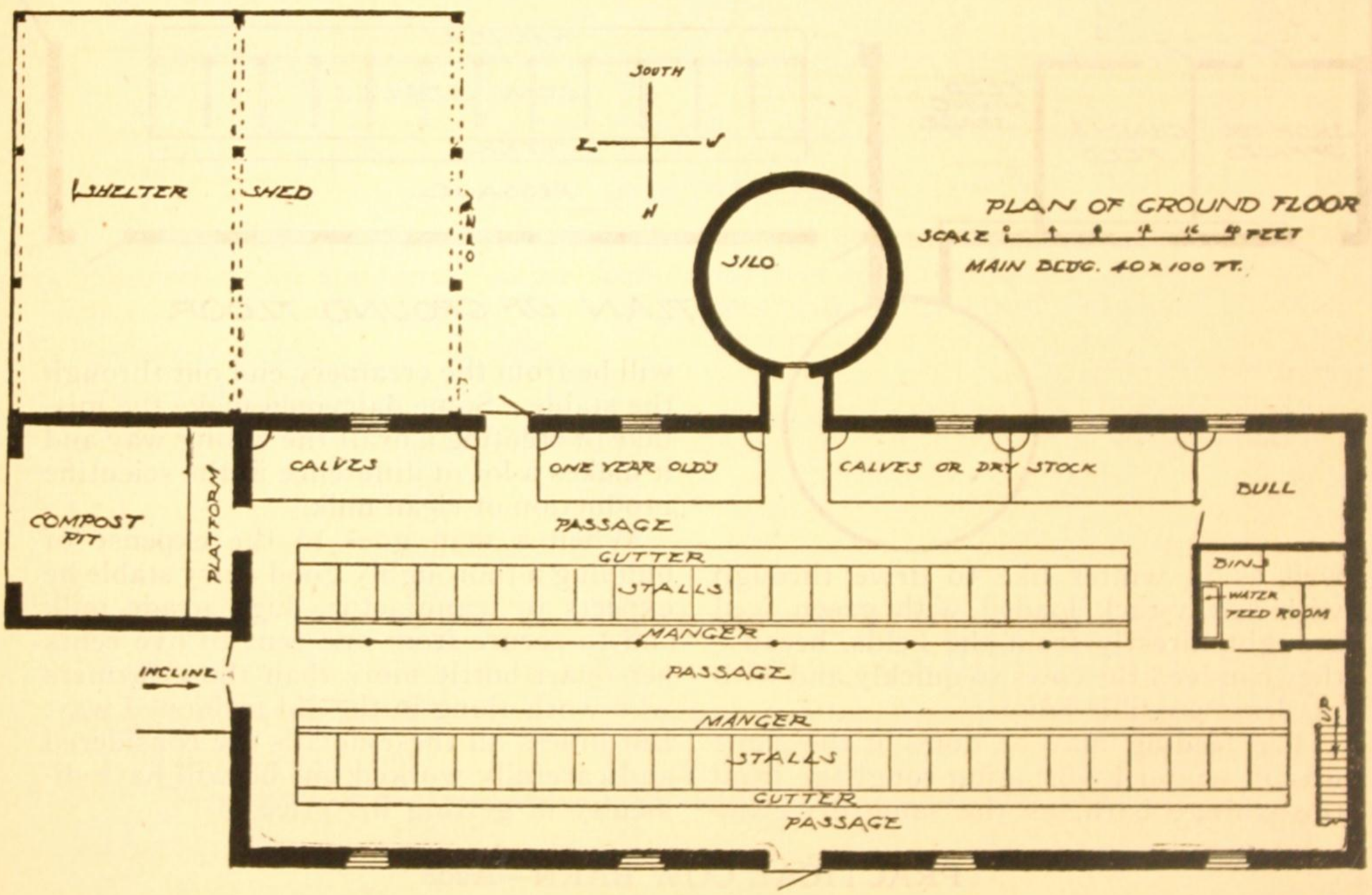
Cost of Blue Prints, $15.00

This cow barn is designed for a cold climate and a special effort was made to protect the stock from the cold, and at the same time give them proper ventilation

and a continuous supply of fresh air by means of air ducts built in the walls, which receive the air near the ground level and the floor and carry it to the ventilators on the roof, which are controlled by a cord, regulating the flow of air as desired.



SOUTH ELEVATION

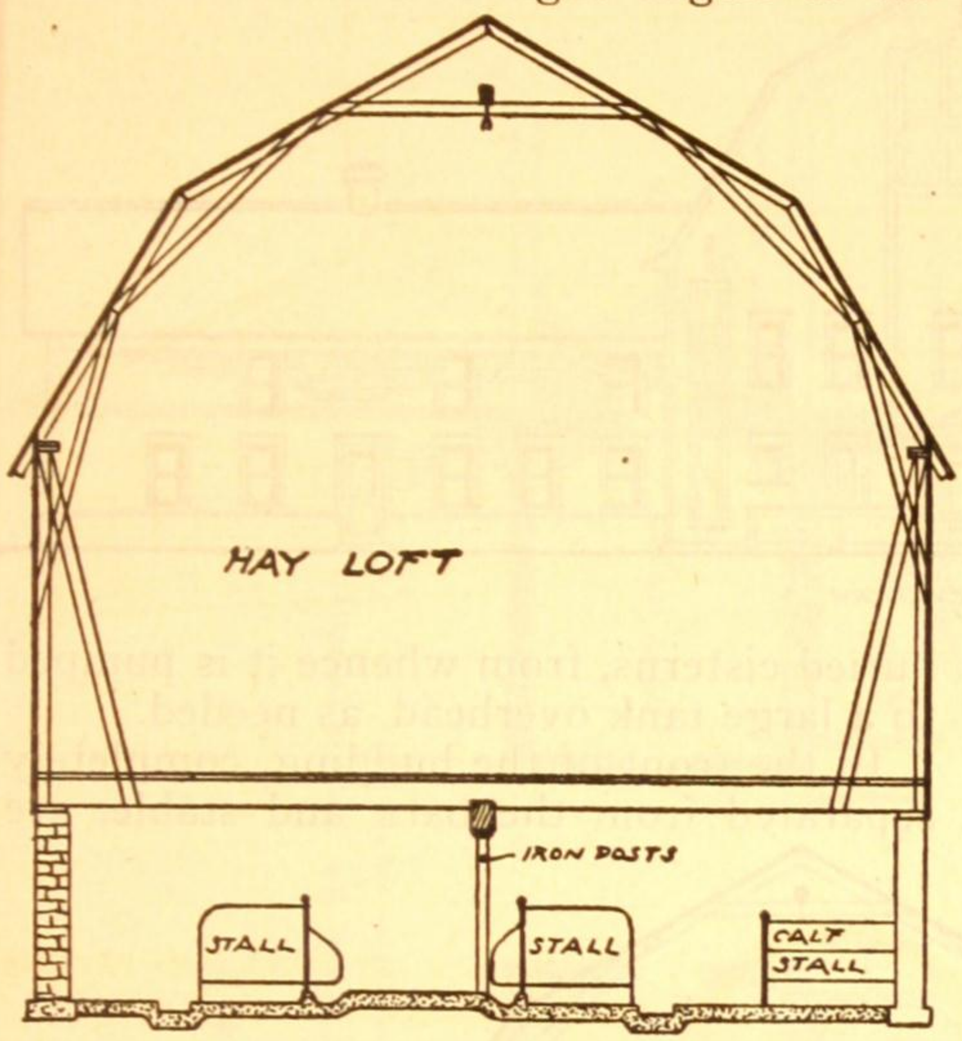


conduct it to the inside of the barn where it enters the stock room near the ceiling. Other ducts exhaust all the foul air from

The barn is located on the slope of a hill so that the hay can be hauled directly into the upper floor, and the walls of the stock

room are built of rubble stone 18 inches thick; this, together with the hay above, makes a warm stock room.

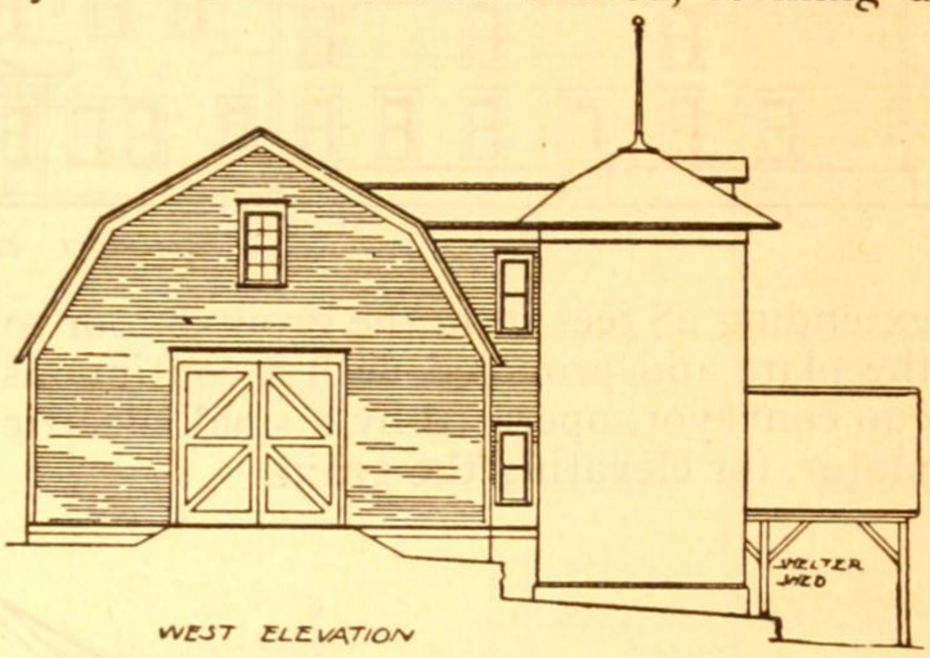
The silo is located at the center of the south side, where it is convenient for feeding and also protected from the north winds. The shelter shed is also located on the south and at right angles to the



CROSS SECTION

main barn, so that the stock is well protected when out of the barn in severe weather. As will be seen from the drawing, this barn is 40 by 100 feet, and contains stalls for forty-six milch cows, besides loose stalls for calves, dry stock, bull, etc. At the west end is a feed room with bins connected by spouts to larger bins on the floor above; also stairway to the upper floor, and on the east end is a manure pit covered by an extension of the shelter shed roof.

The cross section clearly shows the general arrangement of stalls, mangers, gutters, etc., all constructed out of cement laid on solid ground. The stall partitions are built up out of wrought iron bars and pipes, leaving nothing to get out of order or decay. The wood superstructure is constructed out of plank, and the roof is self-supporting, without posts or purlins, by each set of rafters braced, forming a



WEST ELEVATION

continuous arch from one sill to the other.

This roof gives an enormous capacity to the hay room and is well braced against sagging and wind pressure.

The exterior of the barn is sided with matched siding and the roof is of shingles, making a very durable and good looking building, and at the same time a barn that can be built within a reasonable figure.

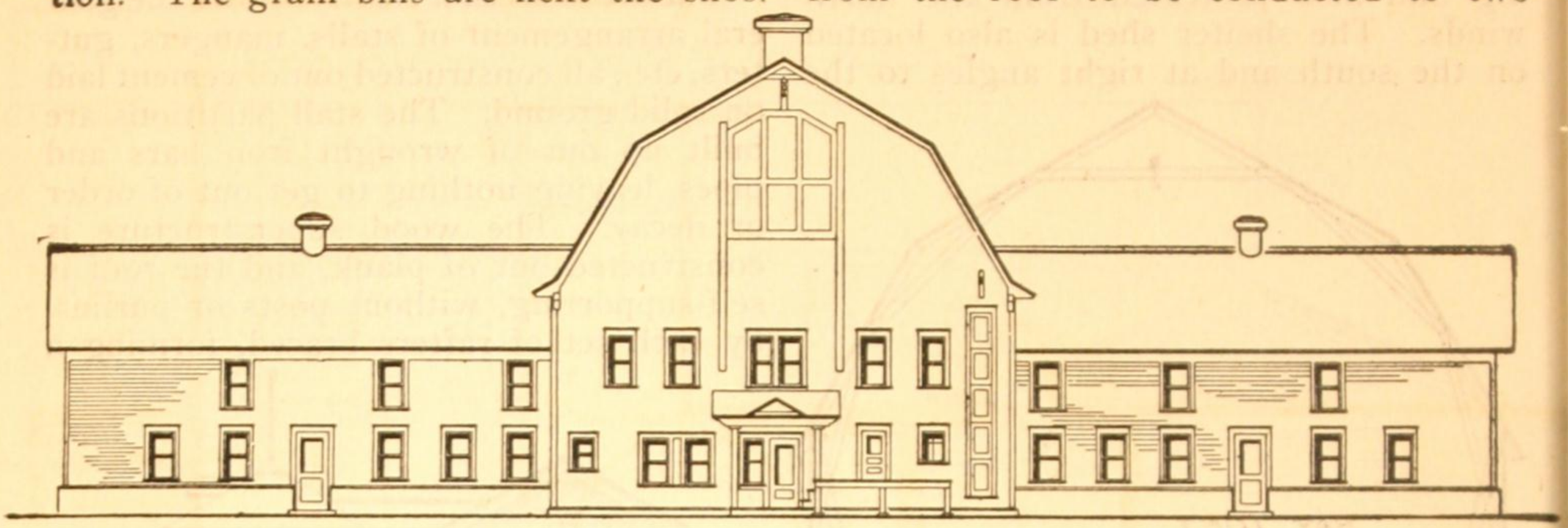
FORTY COW BARN—A209

Cost of Blue Prints, $25.00

A large modern dairy farm building of exceptional completeness and convenience of arrangement is presented herewith. In the one building are grouped the accommodations for the three branches of dairy farming: There are, first, sanitary stabling for forty milch cows, twelve dry cows, two bulls and numerous calves; second, improved storage capacity, accurately figured, for ensilage, grain, roots, dry fodder and bedding sufficient for that number of cattle; and, third, a well-equipped milk cooling and shipping department.

For a barn of such large capacity the arrangement in this case is very good. The general form of the building is that of a cross. The stanchions are arranged in a double row on the ground floor of the long

cross member; the feed storage section, extending back at right angles to this, joins it at the middle. There, two large silos are located with the feed mixing floor between—thus having a very central location. The grain bins are next the silos.



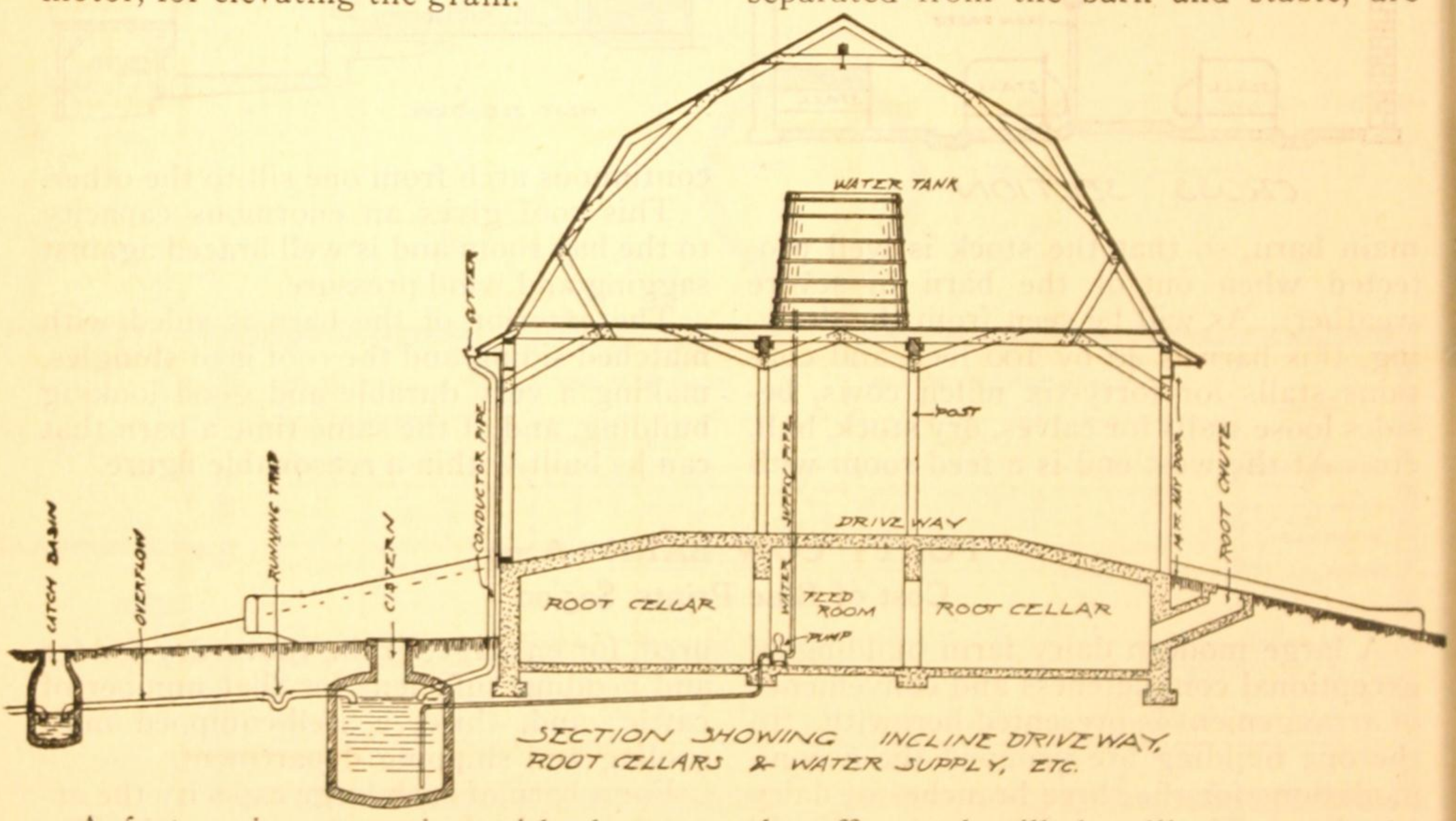
FRONT ELEVATION

extending 28 feet from the ground floor to the plate and provided with a continuous cup conveyor, operated by a small electric motor, for elevating the grain.

filled from the outside through inclined chutes. In that way the reinforced concrete floor was not weakened by trap door openings through it.

This design provides for the rain water from the roof to be conducted to two buried cisterns, from whence it is pumped to a large tank overhead, as needed.

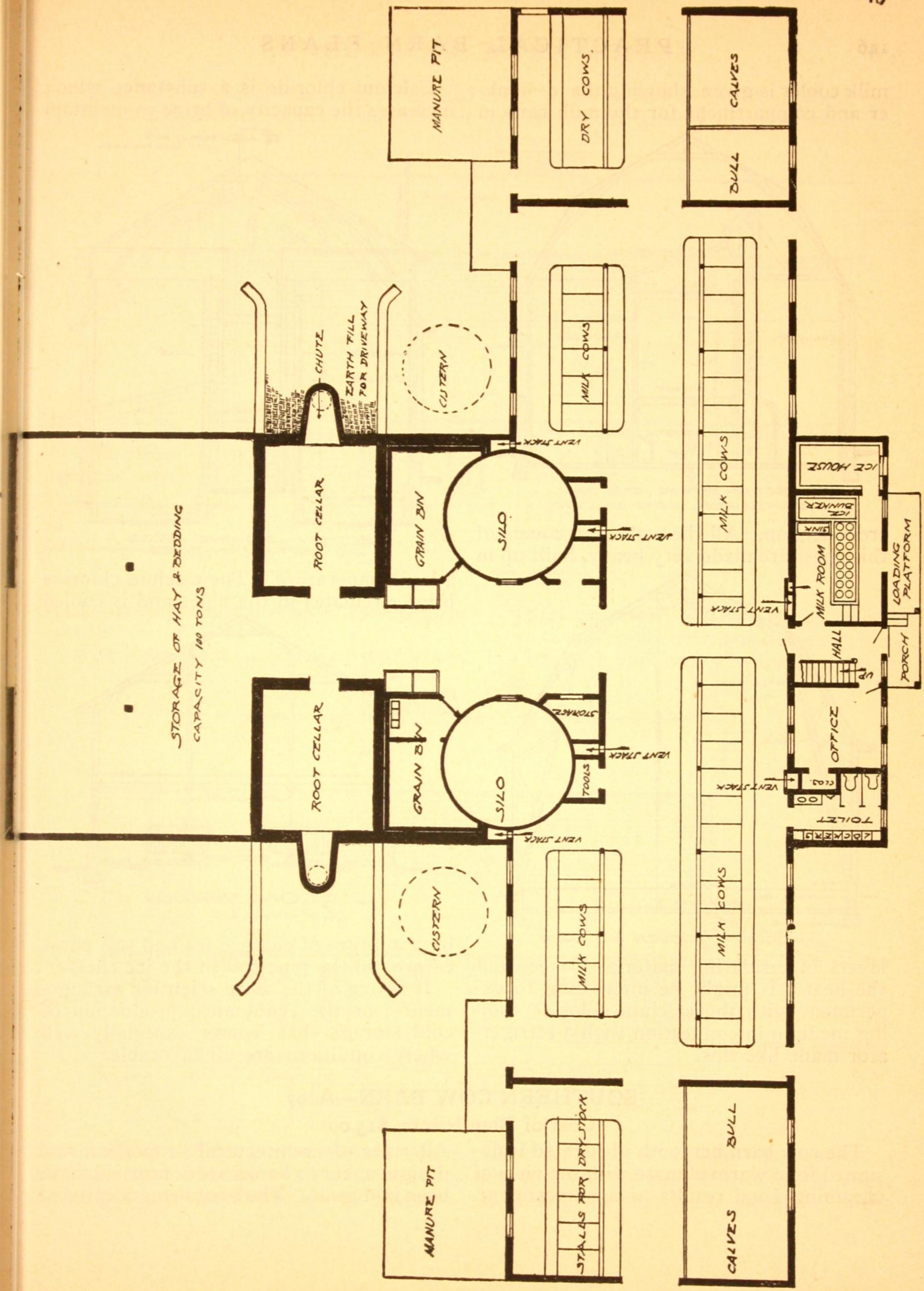
In the front of the building, completely separated from the barn and stable, are



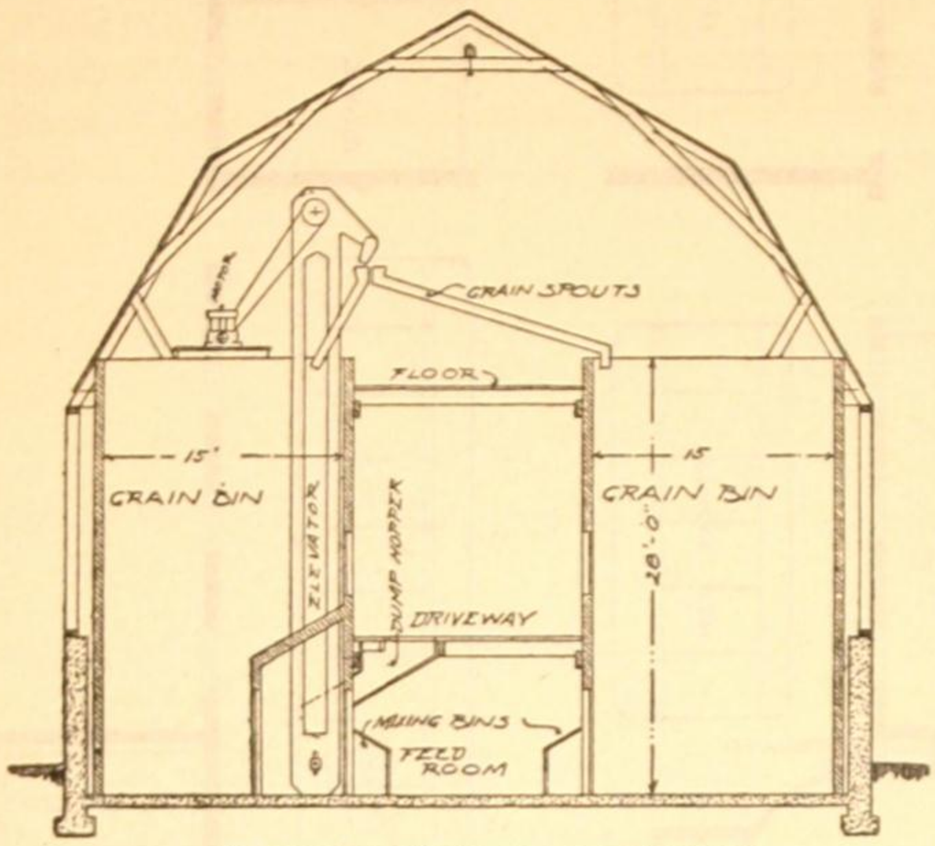
SECTION SHOWING INCLINE DRIVEWAY, ROOT CELLARS & WATER SUPPLY, ETC.

A feature in connection with the root cellars is worthy of notice. They are located on the ground floor under the "barn floor" or elevated driveway. They are

the office and milk handling rooms. As will be observed from the plans the ice house is very conveniently located to the cooling room. A detail drawing of the

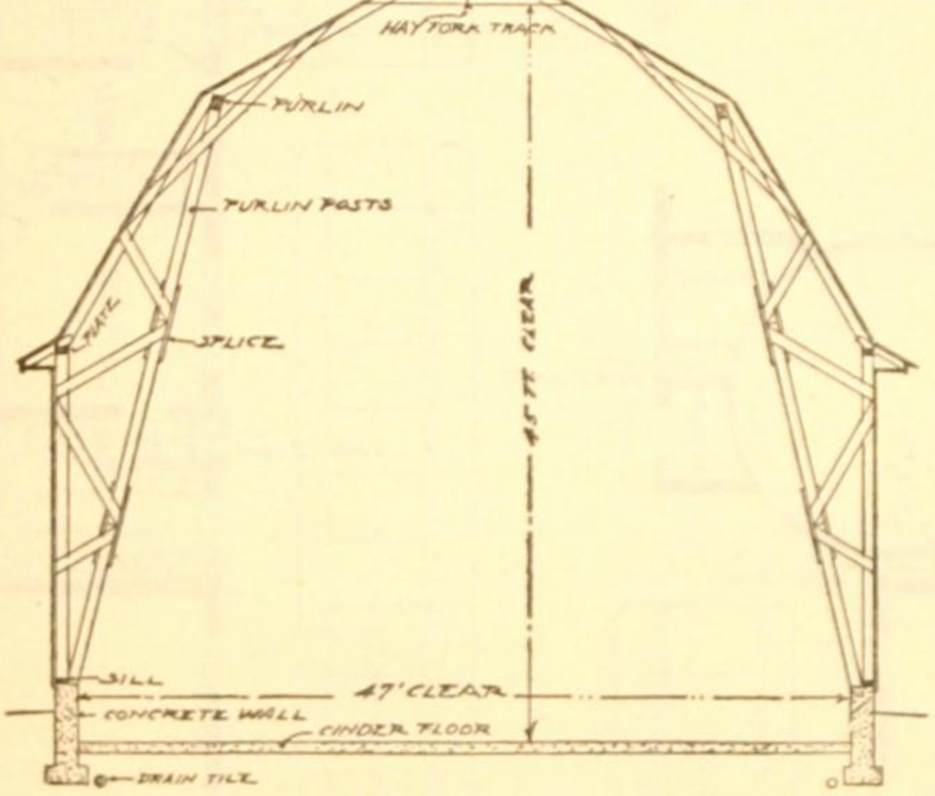

MANURE PIT
DRY COWS
CALVES
BULL
MILK COWS
CHUTE
EARTH FILL FOR DRIVEWAY
CISTERN
VENT STACK
ROOT CELLAR
GRAIN BIN
SILO
STORAGE OF HAY & BEDDING
CAPACITY 100 TONS
STORAGE
TOOLS
ICE HOUSE
ICE BUNKER
SINK
MILK ROOM
LOADING PLATFORM
HALL
UP
PORCH
OFFICE
TOILET
STALLS FOR DRY STOCK

milk cooler is given, showing the ice bunker and compartment for the milk cans in



SECTION SHOWING GRAIN BINS, GRAIN ELEVATOR, MIXING BINS, ETC.

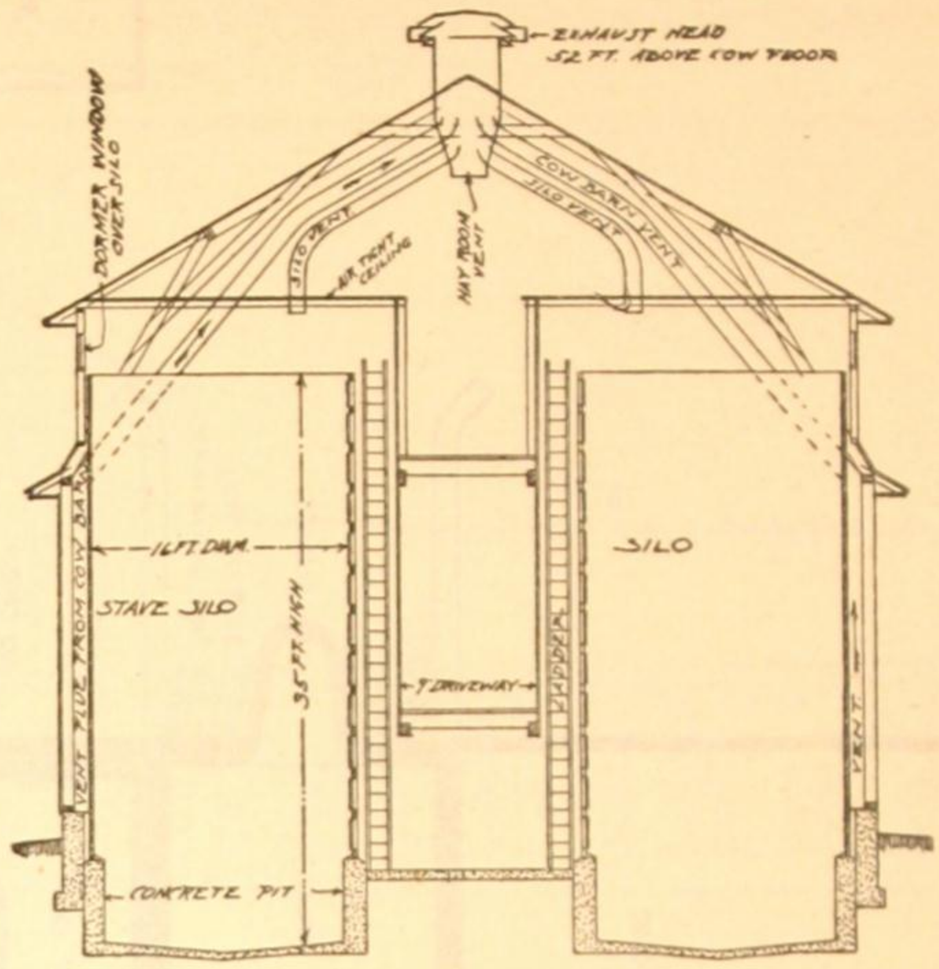
cross section. All the walls and covers of this chest are made very heavy, built up in



SECTION THROUGH HAY ROOM

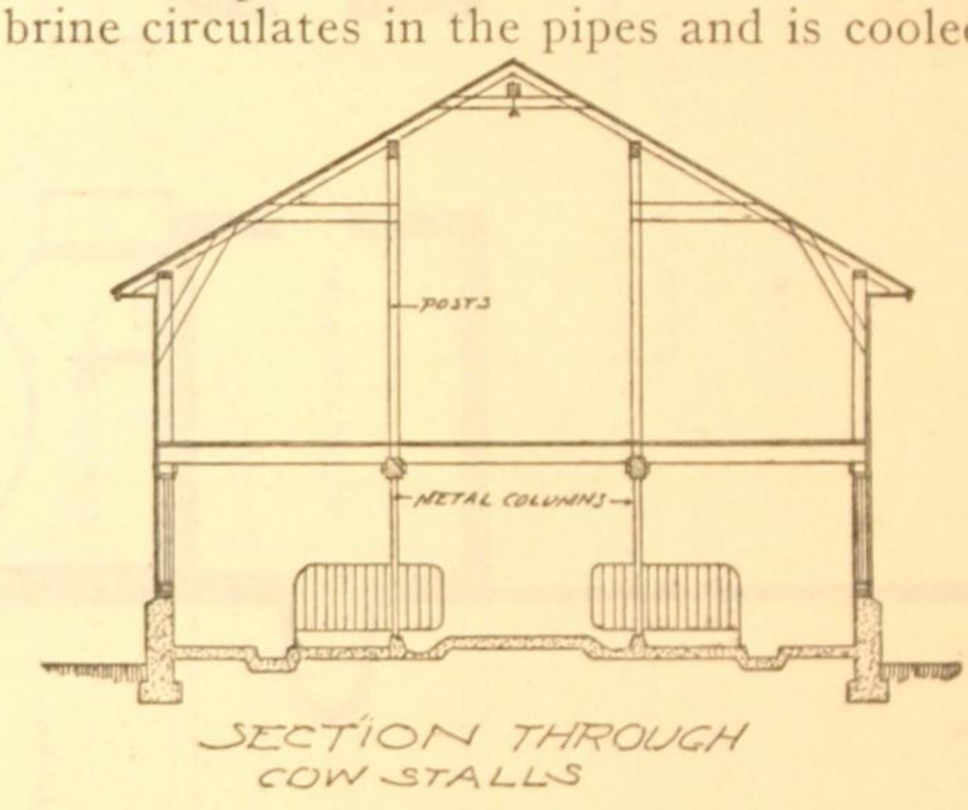
layers of insulating material to keep out the heat. It might be interesting to experiment with the calcium chloride cooling medium in connection with a refrigerator made like this.

Calcium chloride is a substance which increases the capacity of brine to maintain



SECTION SHOWING SILOS AND VENTILATION FLUES

a low temperature. The calcium chloride brine circulates in the pipes and is cooled



SECTION THROUGH COW STALLS

by a mixture of chipped ice and salt packed around the pipe coil in the ice chest.

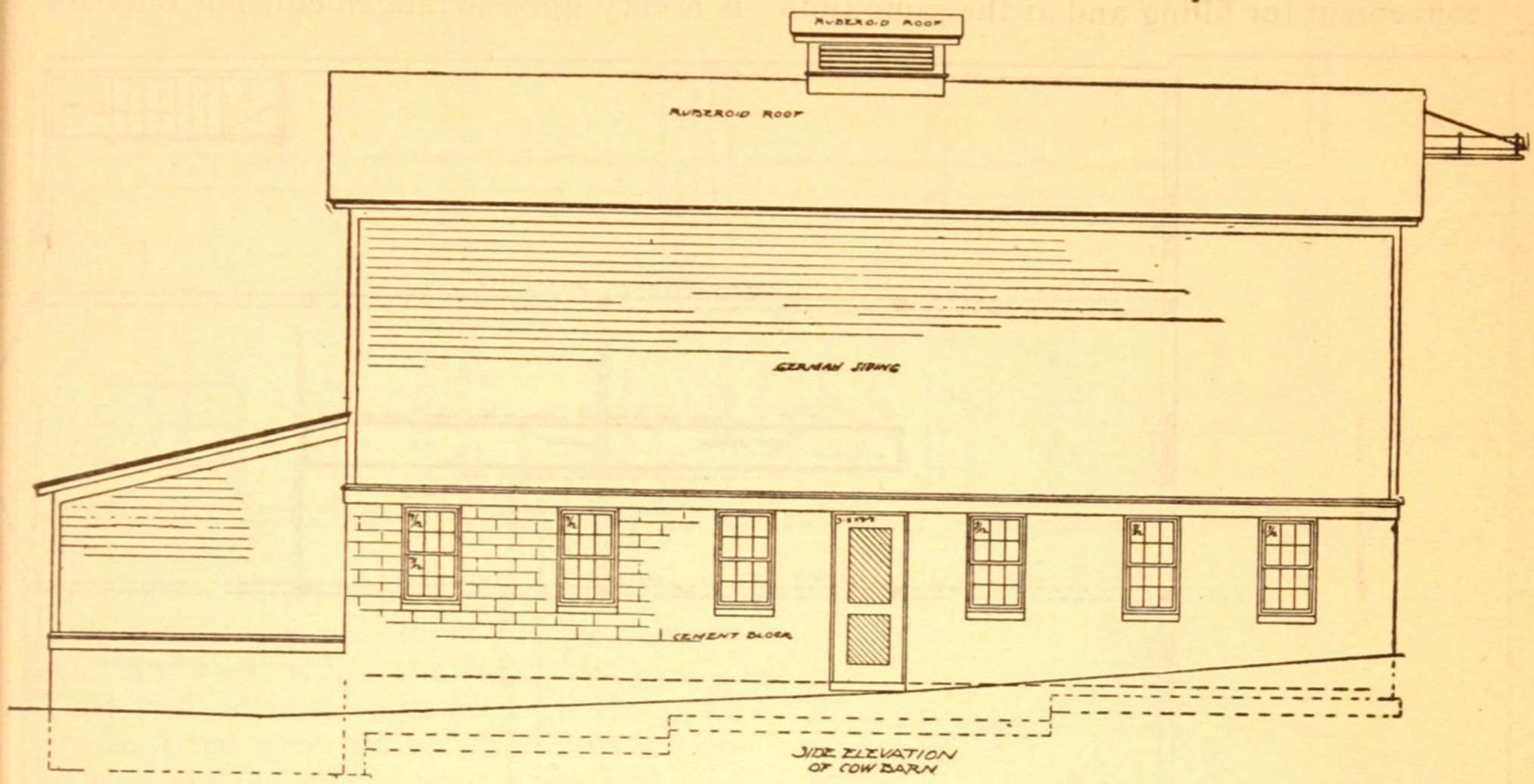
It is one of the more scientific arrangements for the economical production of cold storage that works especially well where conditions are all favorable.

SOUTHERN COW BARN—A207

Cost of Blue Prints, $15.00

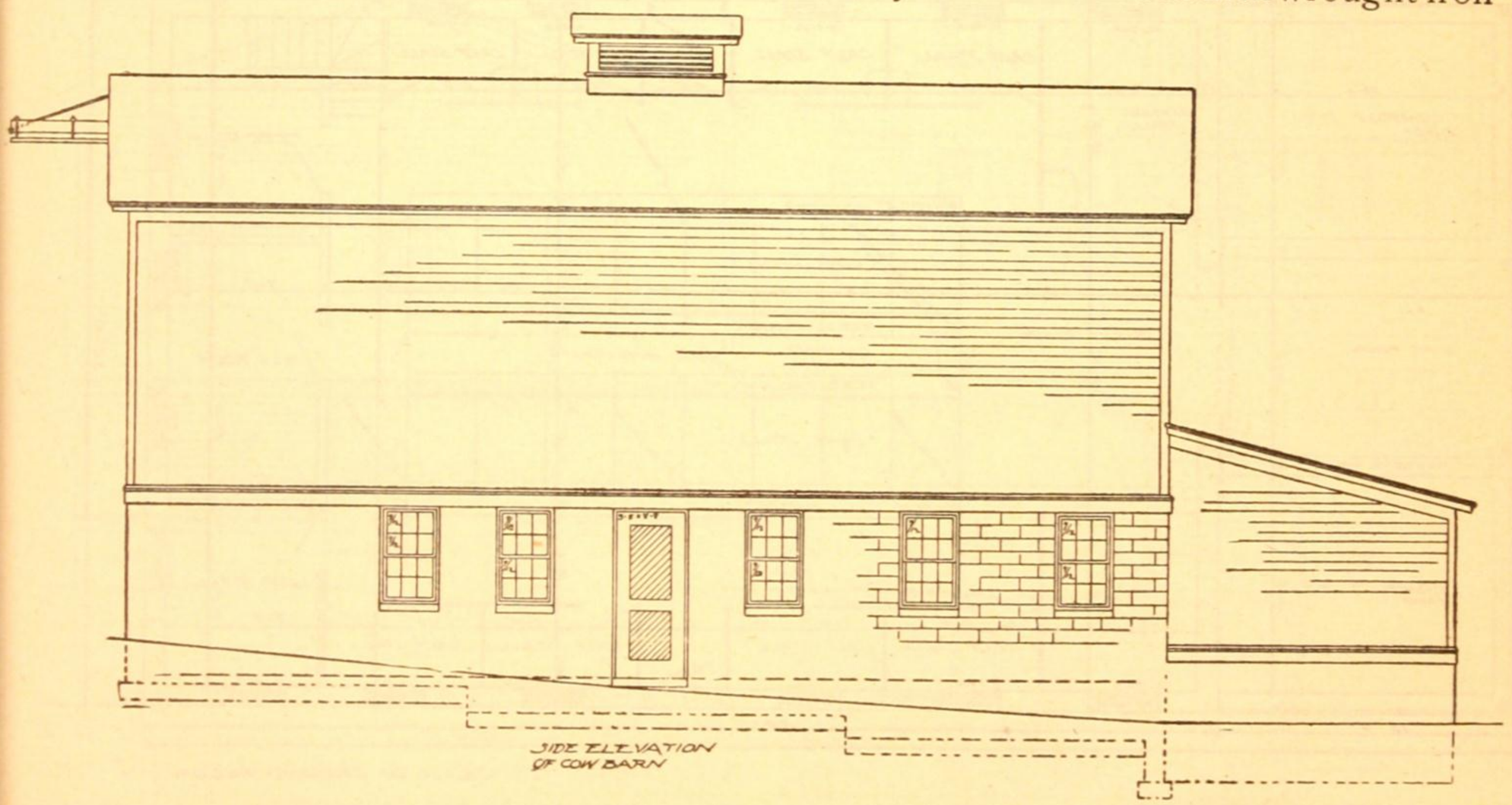
The cow barn herewith illustrated is designed for a warm climate with the view of obtaining good results as an investment. All rules of architectural proportion and design, as far as books are concerned, have been laid aside. The barn being located at

a place where good returns are required and no architectural beauty called for, it



is a success because it meets all its requirements.

The walls of the basement or stock room



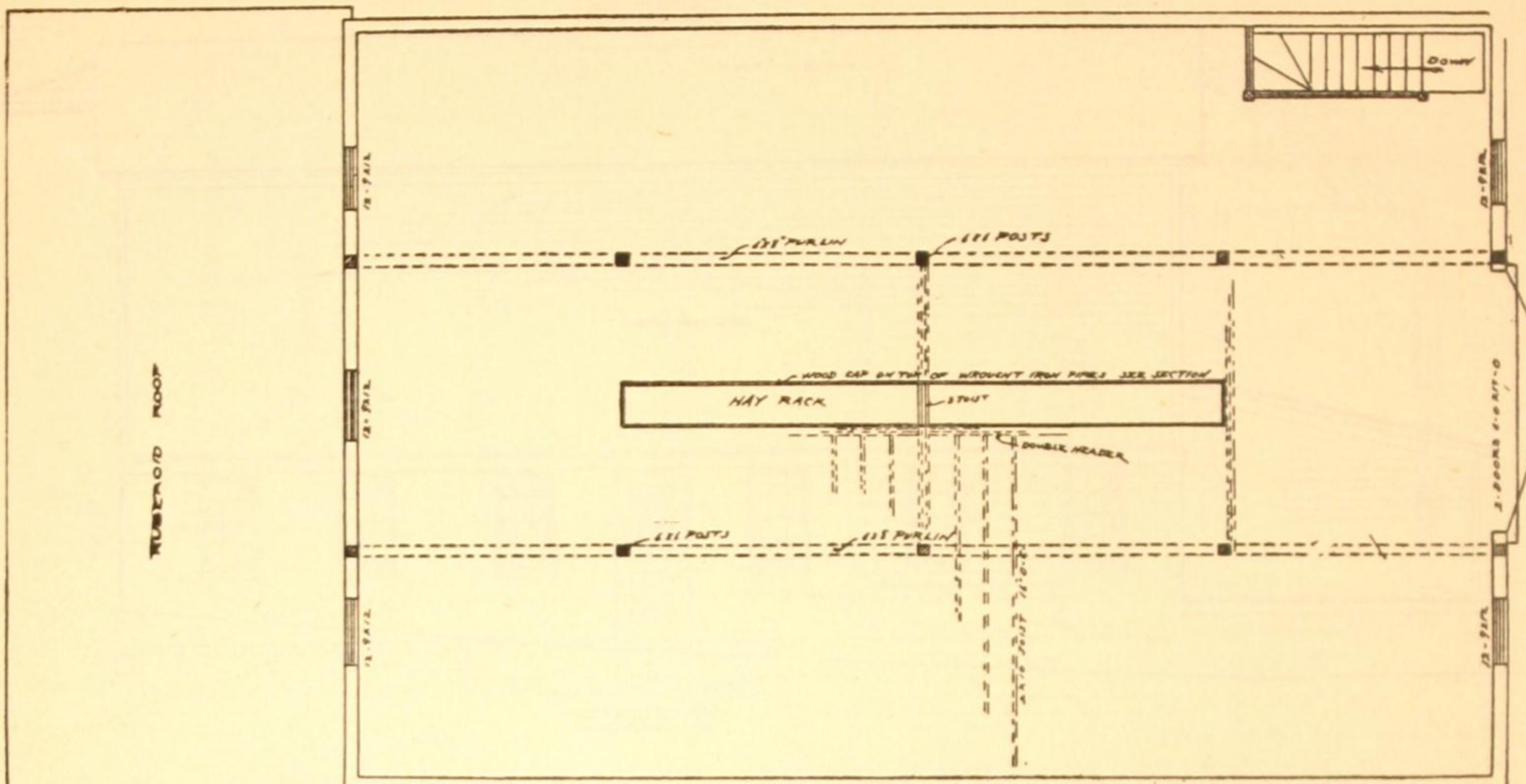
are built of cement blocks and the entire surface being of cement will keep the room cool in warm summer weather. The sec-

ond floor, or hay room, is of wood construction and covered by a flat roof.

There are two rows of cow stalls; the cows facing each other, and between them is a hay rack built of one inch wrought iron pipes set six inches apart, the bottom of the pipes being imbedded in the concrete floor and the top of the pipes run into a

wood rail. This feed rack, extending about three feet above the hay floor, makes it convenient for filling and at the same time

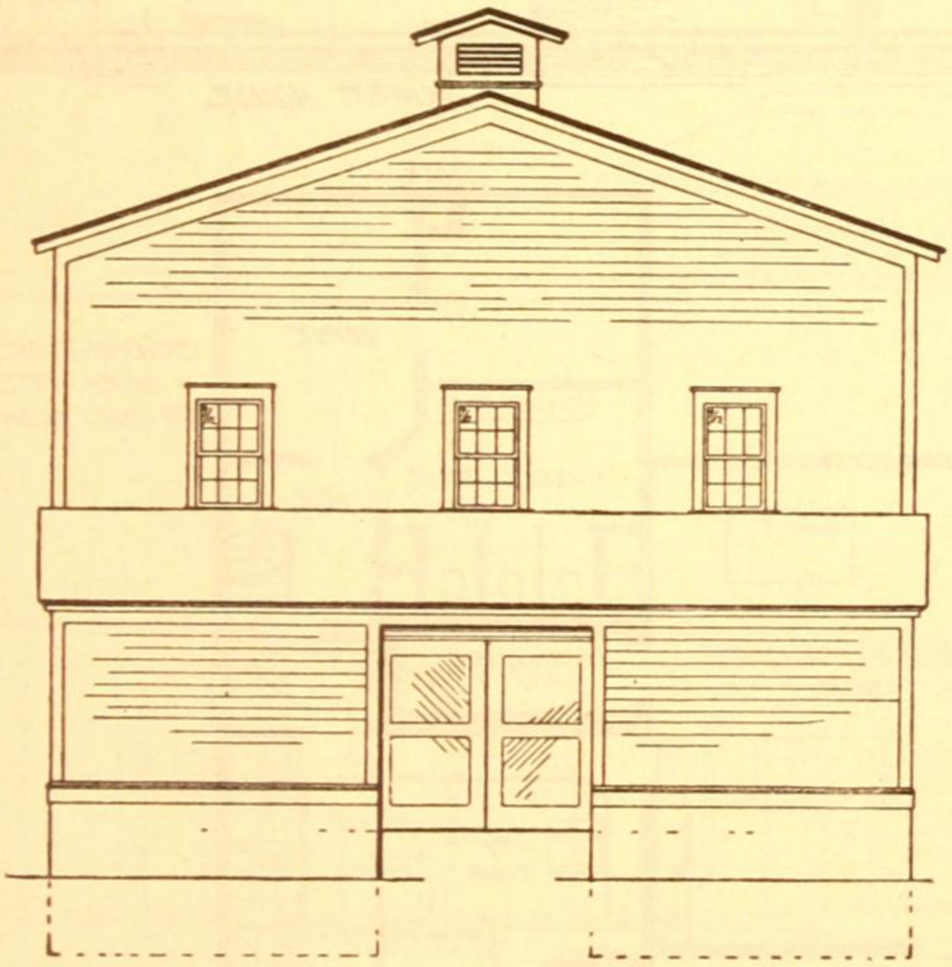
trough formed into the cement floor for feeding other foods and for watering. This is a very good arrangement, not only for


RUBEROID ROOF
DOWN
2"PLANK
III POSTS
WOOD CAP ON TOP OF WROUGHT IRON PIPES SEE SECTION
HAY RACK
STRUT
DOUBLE HEADER
III POSTS
III PURLIN
2"PLANK
2"PLANK
2"PLANK

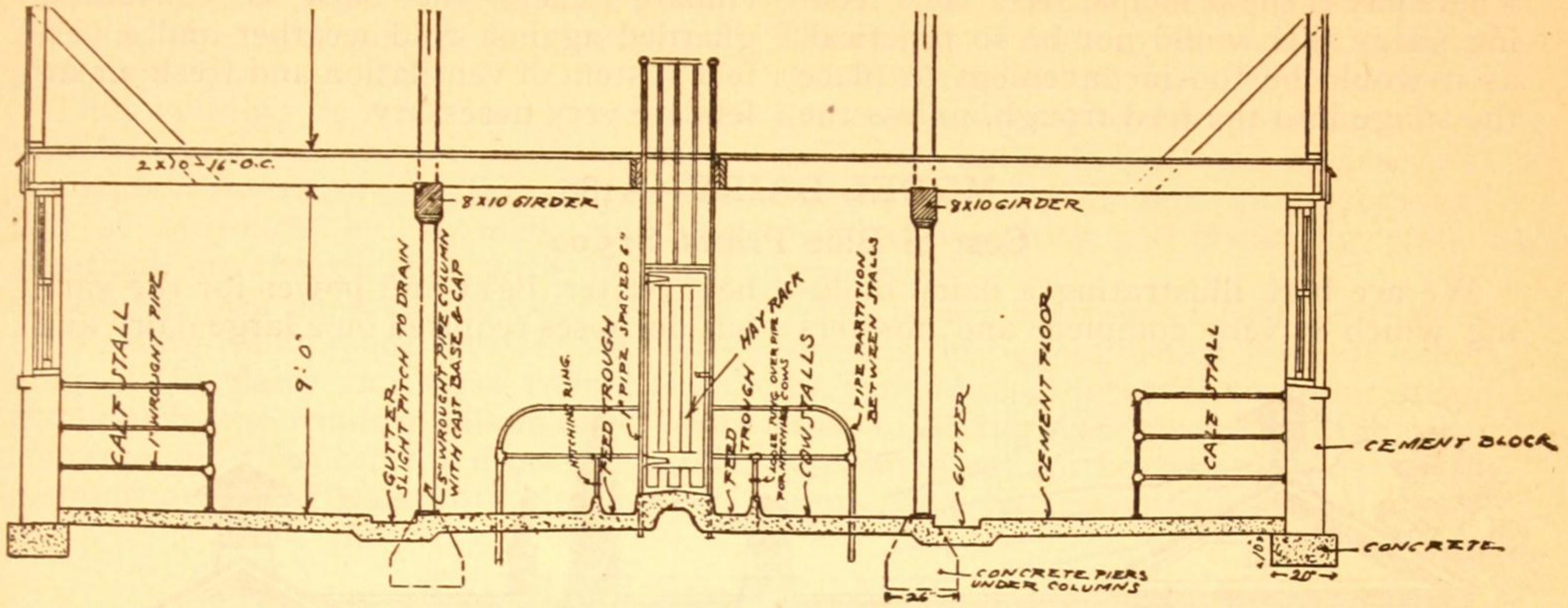
place of being tramped on and wasted.

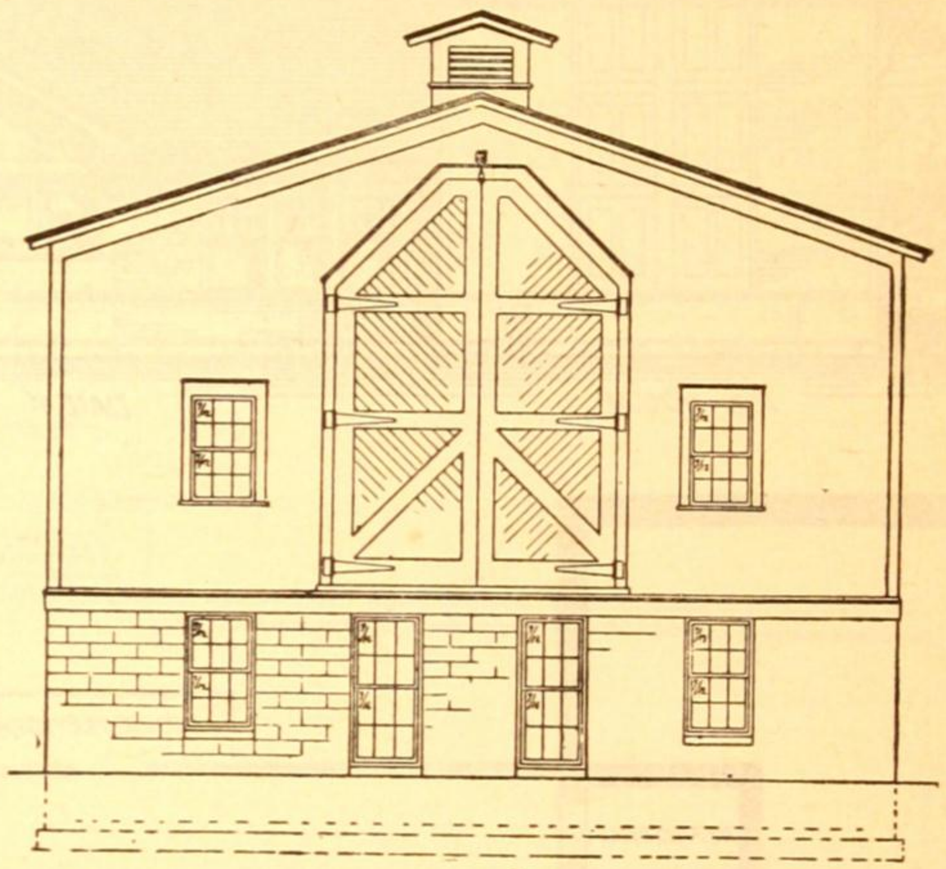
The cows are separated by iron pipe railings which are imbedded in the cement floor and fastened to the hay rack.

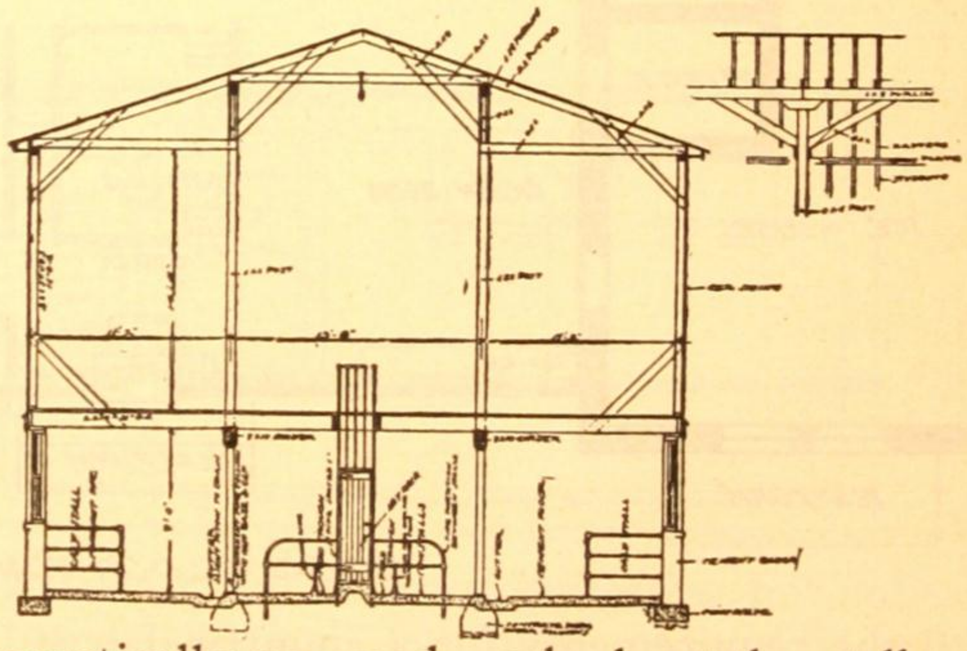
As will be noticed in the cut, the cows are fastened with chains which are fastened to a ring placed around a vertical pipe each side of the stall.



The stall floors have a gradual slope to a shallow gutter at the rear of the stalls and this gutter has a gradual slope to a drain tile to carry out all liquids to a cistern under the compost pits at the end of the barn. Calf stalls and loose stalls for dry stock and bull are arranged about the outside walls, and these are also constructed of wrought iron pipe, so that there is







practically no wood work about the stalls or floors which can rot or get mouldy.

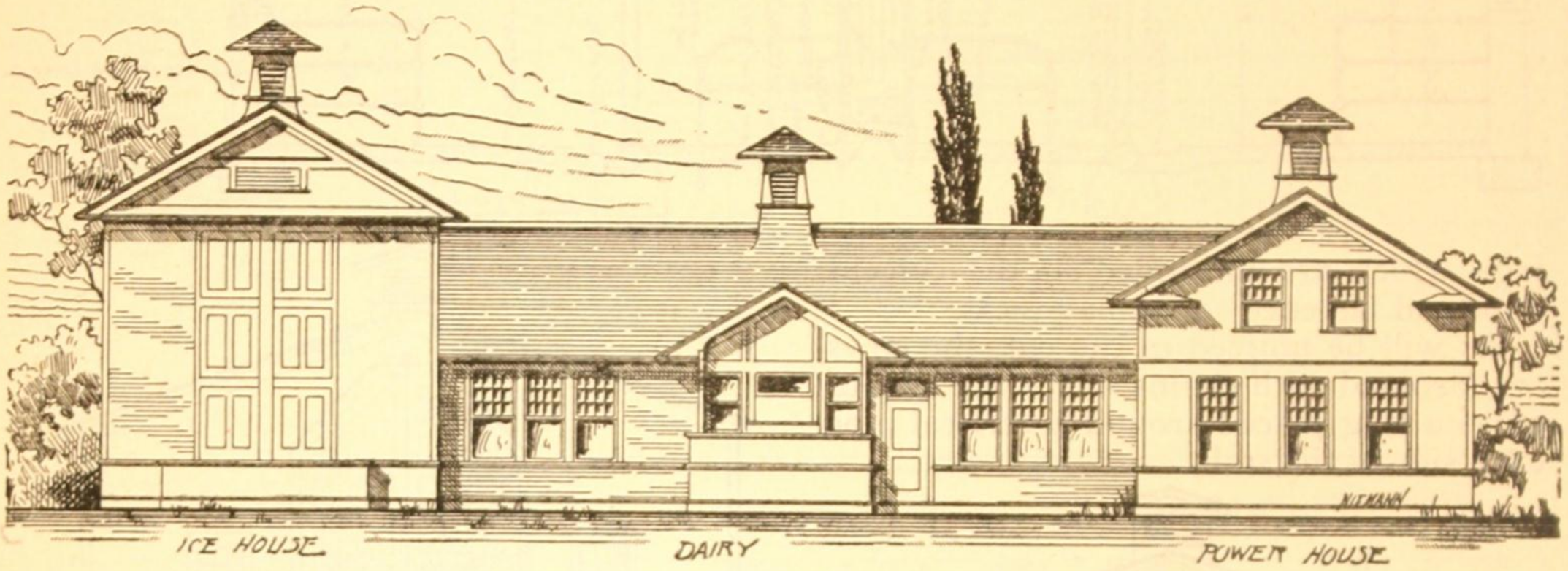
This makes an ideal barn for its purpose

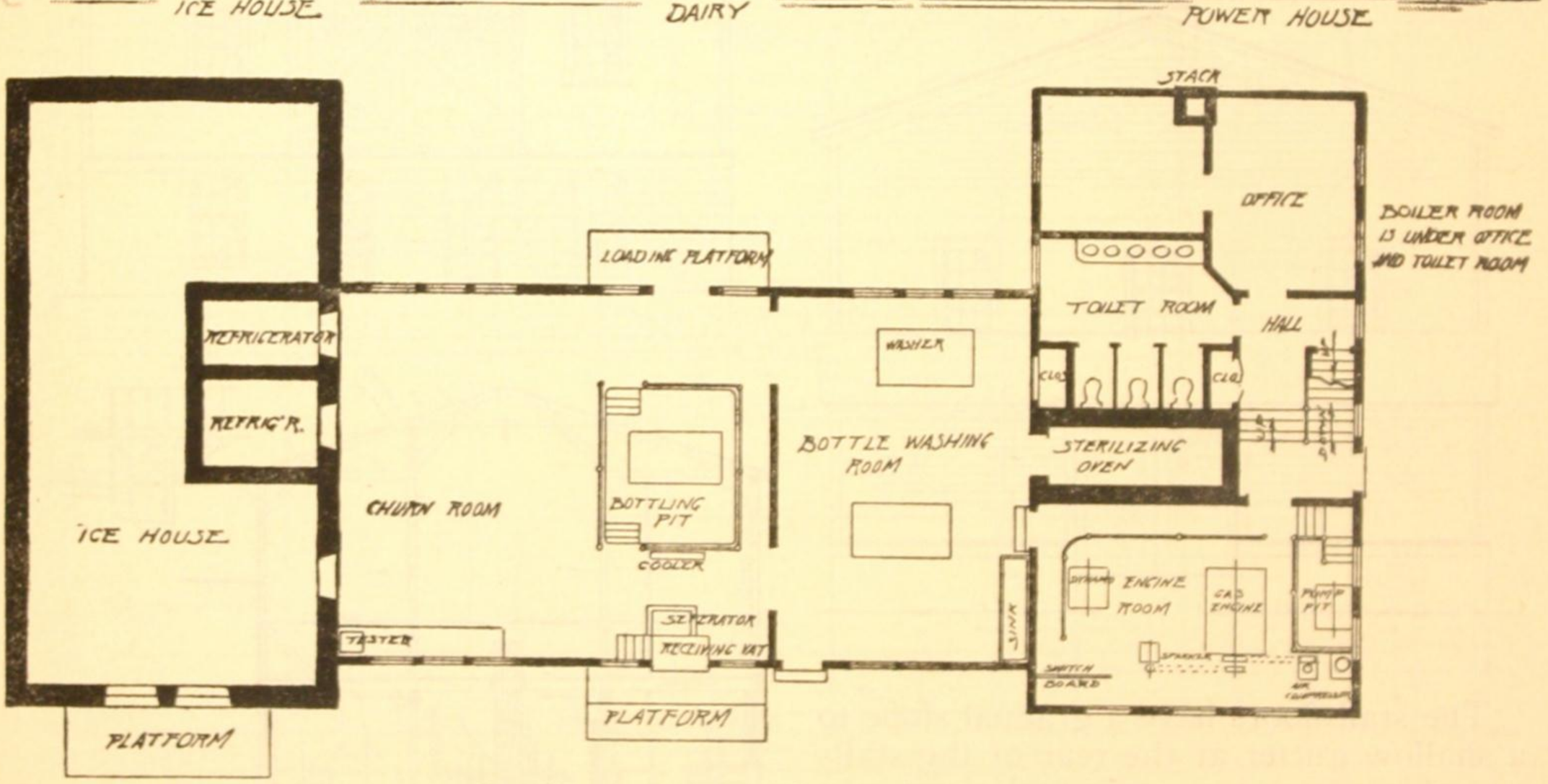
and can be constructed at a reasonable price, and is practical for southern states where hay is the principal feed. For feeding silage this would not be so practical, as it would be too inconvenient to place the silage into the feed trough, unless the cows were first taken out of their stalls. Again it would not be well for a northern climate where the barn is constantly guarded against cold weather and a perfect system of ventilation and fresh air inlets are very necessary.

MODEL DAIRY—A180

Cost of Blue Prints, $15.00

We are here illustrating a dairy building which is very complete and answers all the requirements for a country dairy. It has waterworks, power and electric light plant of sufficient capacity to supply heat, water, light and power for the various purposes required on a large dairy and stock farm. The building consists of three parts; the left hand wing is the ice storage house and also contains two cold storage





GROUND FLOOR PLAN OF DAIRY

rooms for butter, cream, milk, etc.; the central part is the dairy containing the churn room, bottling room, washing room, etc., and the right wing is the power and pumping station.

This building is built on a concrete foundation, above which it is of the regular balloon frame construction. The walls are of two-inch by six-inch studding sheathed on the outside with matched sheathing, then papered and covered with drop siding. The space between the studding of the dairy and wash rooms from the floor to the window sills is filled with concrete and then cemented on the inside forming a cement wainscoting as well as strengthening the building. Above this cement work the side walls and ceiling are ceiled with beaded yellow pine ceiling. The roof is of moss green stained shingles and has large ventilators, which makes it hygienic and adds to the appearance.

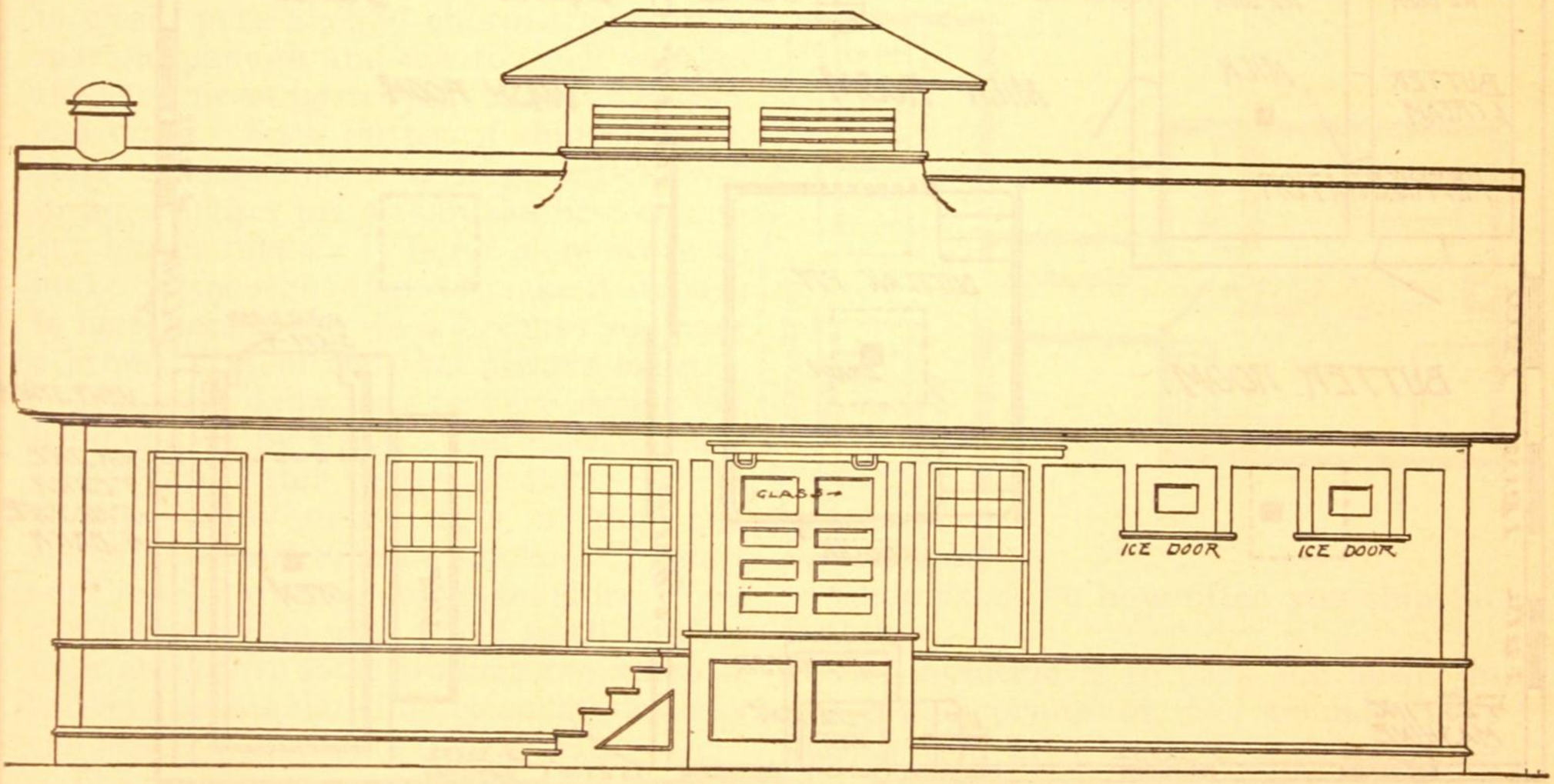
The ice house is insulated with several thicknesses of hair felt, air spaces and matched sheathing and insulating, waterproof paper.

The power house has a basement which contains the boilers, which are sunk below the ground level in order to admit steam pipes to be run underground to the other farm buildings for heating purposes. The pumps and dynamo are run by an engine.

ANOTHER MODEL DAIRY—A176

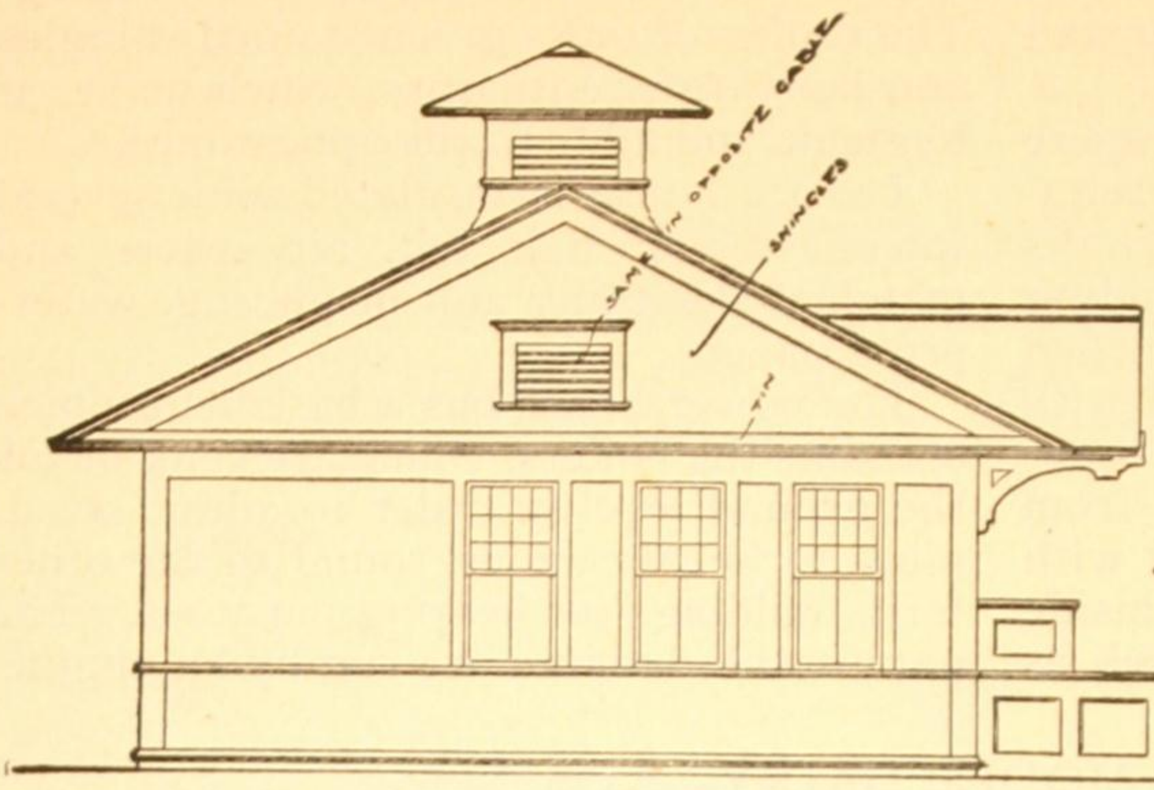
Cost of Blue Prints, $10.00

A dairy building is located east of the cow barn and so arranged that the milk can be brought from the east door of the cow barn directly to the receiving vat in the dairy building. The milk cans are unloaded from the truck on to a platform, in order to maintain a uniform tempera ture in the building and to prevent the admittance of any impure air. From the receiving vat the milk flows by gravity through the various machines and apparatus without having to be handled by any

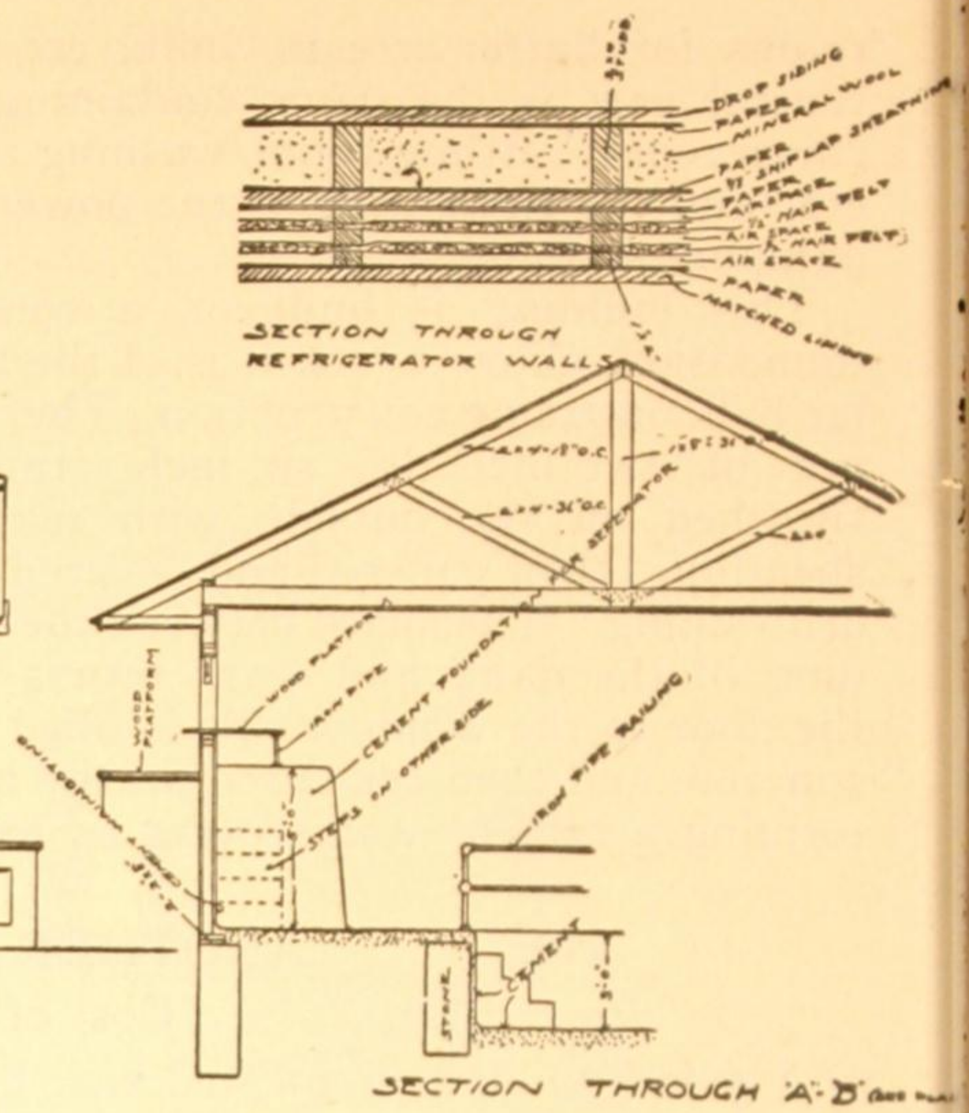


from which the milk is poured into the receiving vat from the outside of the building, thus avoiding the opening and closing of outside doors, which is very essential hands until it is sealed in bottles, not only for economical, but more especially for sanitary reasons.

From the receiving vat the milk flows

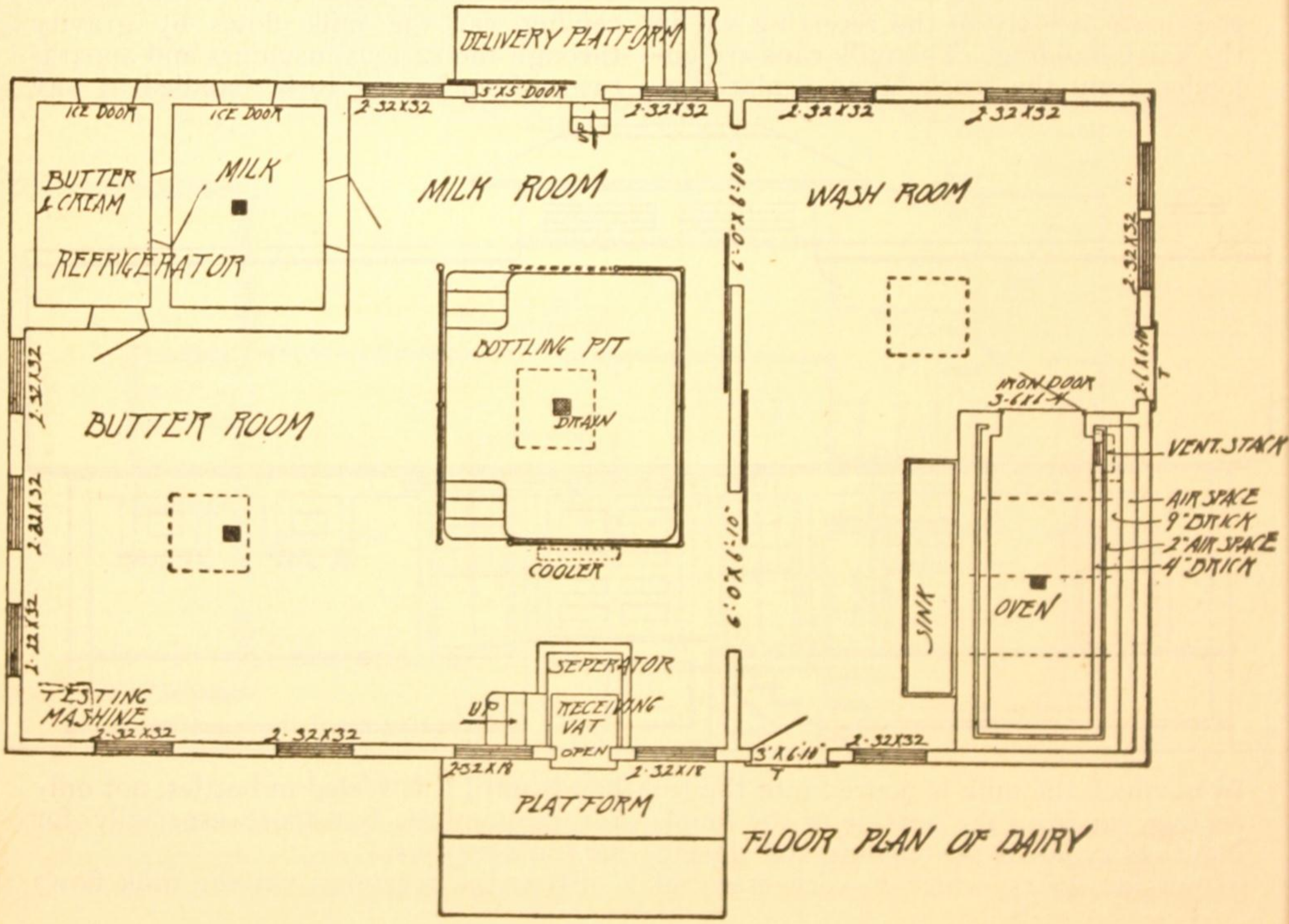


SOUTH ELEVATION



SECTION THROUGH 'A-B'

SUPPLEMENTARY DRAWING OF DAIRY BUILDING.



FLOOR PLAN OF DAIRY

into the separator and after the milk has been separated from the cream it is again mixed together and then flows through the cooler and into the bottling machine, which is located in a pit in the center of the milk room. The filled and sealed bottles are then placed into wooden delivery boxes for immediate delivery or else stored in the refrigerator ready for use.

In order to obtain a purely sanitary milk much depends on the care and cleanliness of the various receptacles, therefore too much emphasis cannot be placed on the washing and sterilizing. All the bottles are thoroughly washed by machines, which can do the work very thoroughly and rapidly by revolving brushes, etc., and after a thorough washing they are set into the sterilizing oven, which is equipped with steam coils and steam jets.

The butter room is located to the left of the milk room and is well equipped with the most up-to-date churns and also contains the testing machine and other apparatus. The refrigerator is divided into compartments, and is of the most approved construction.

The construction of this building is of the usual balloon type, having a stone foundation under walls of 2 by 4-inch studding, which are sheathed and sided on the outside. Between these is placed a double thickness of heavy building paper.

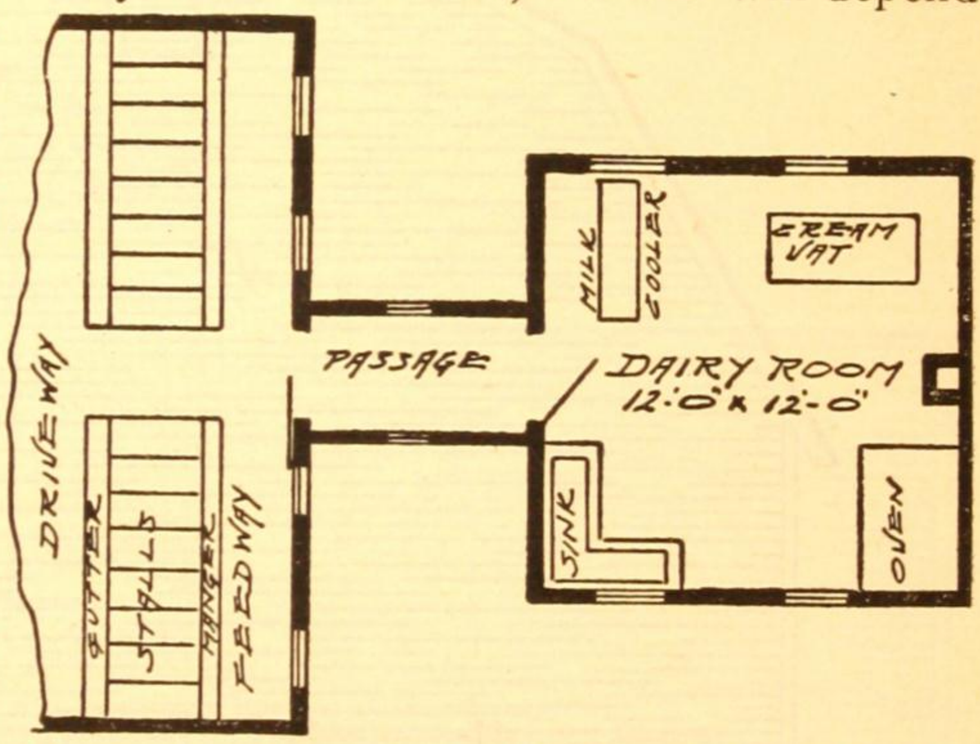
HOME DAIRY—A206

The very best butter is made on farms where the women thoroughly understand the business and have the proper facilities. When the milk from good healthy cows is run through a cream separator as soon as possible after milking and the cream cooled to the right temperature and kept in clean, pure air and churned when it is just old enough and not too old, you get the very nicest butter that skill and energy can make. Such butter, if shipped regularly to consumers in large cities, will bring a bigger price than the best creamery butter made. It is no more work to make butter right than to make it wrong; in fact there is less work because you have a proper system and that always helps.

The farm dairy may be very simple but is should be by itself. You cannot make gilt-edged butter in the kitchen. There are too many odors from cooking and sometimes from tobacco smoke. Cream is very touchy when it comes to odors. You can insult cream with a bad smell quicker than any other food product and when it is once contaminated no cleansing process can possibly eliminate the trouble.

The dairy may open off from the kitchen but you must keep the door closed. You will need some means of heating this room in winter time, but during the spring, fall and summer it will be warm enough without, and if it is on the north side of the building it will be cool enough most of the time without using ice, but ice is cheap enough to have and use when you need it.

This dairy is intended for from ten to thirty cows. If you have more cows you may need more room, but that will depend



to some exten on how often you ship the butter.

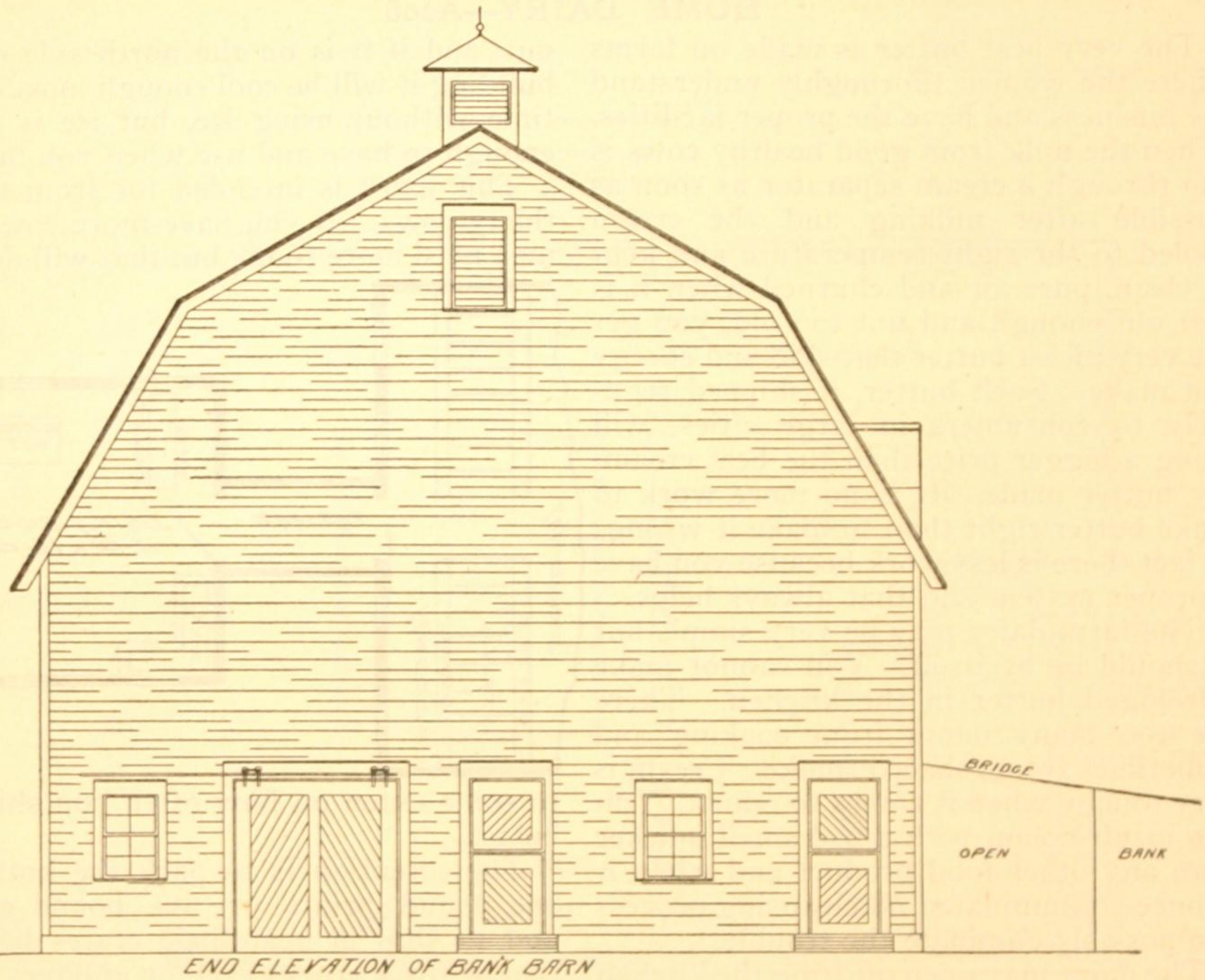
The intention is to pack the butter in one pound prints or five pound crocks and to ship in neat little crates holding two or three crocks each or in boxes holding ten or twenty prints. If you have the proper storage and the butter is made to keep you can hold it in your store room until you get ready to ship it.

Department of
General Farm Barns

AN OHIO BARN—A146

Cost of Blue Prints, $10.00

A STYLE of barn that is very much used in Ohio is shown in plan (A146). A threshing machine is set first on one side and then on the other for convenience in

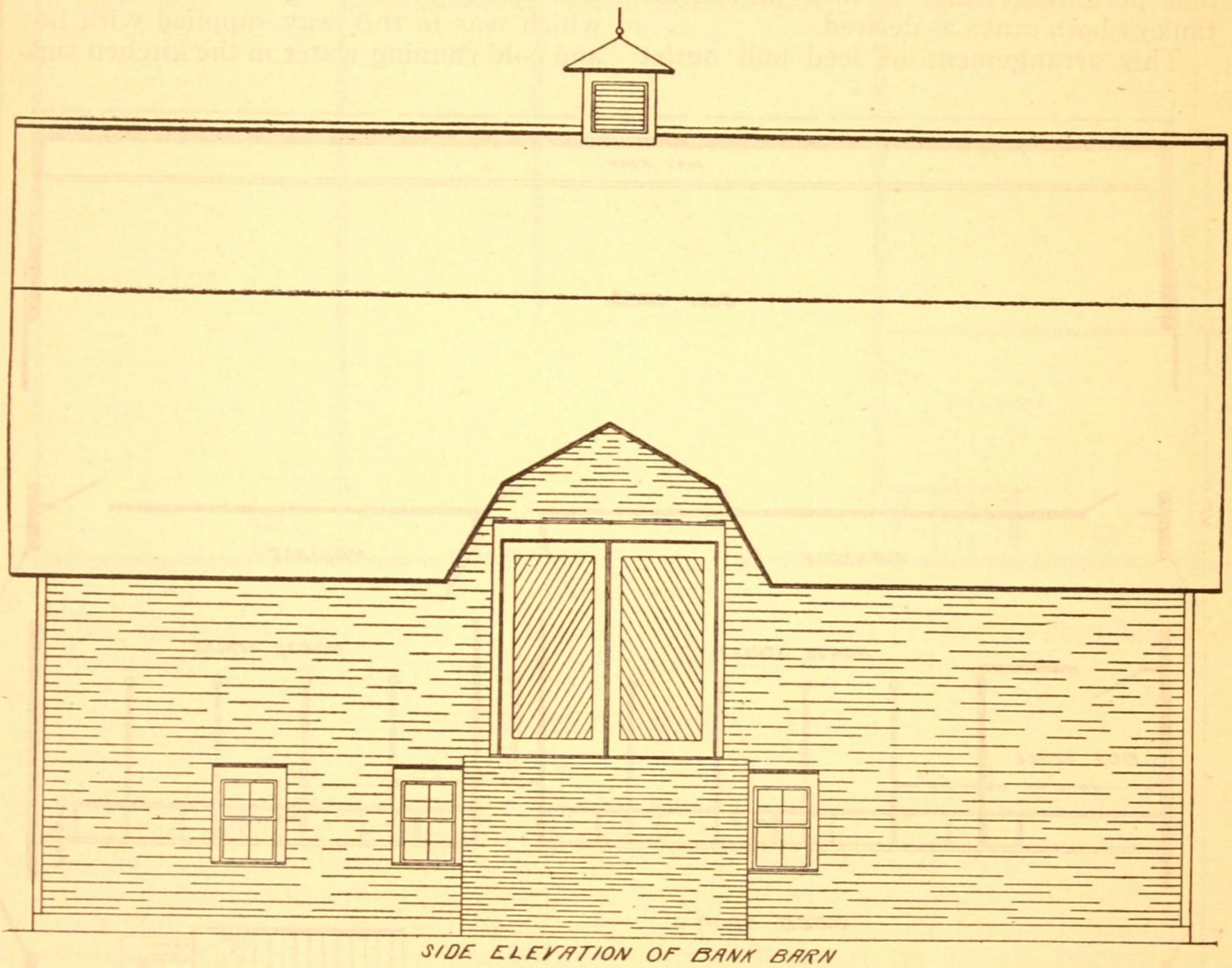


END ELEVATION OF BANK BARN

peculiarity of this style of barn is what is commonly termed a double threshing floor. In some of the larger ones the getting the grain to the machine. The bridge from the bank to the ground floor must be stronger than common barn

bridges because it spans the space between the barn and bank and it leaves a runway for cattle along the bank side of the building. In this plan the cows have no stalls but are stabled in an enclosed shed with a feeding rack the whole length of the side so arranged that it may be filled from the mow above. Several removable racks for feeding grain may be placed anywhere in this shed and a water trough with an everlasting supply of good pure water will hardly freeze in here.

There are many points of convenience with the barn proper. The entrance to the barn being overhead the whole ground space around the barn is left free to handle stock. Horses, cows, sheep and hogs may all have different quarters and be kept separate very much to the advantage of the stock and at a great saving in time. The dampness which is a bad feature of most bank barns is obviated in this plan because there is a circulation of air all around.



SIDE ELEVATION OF BANK BARN

One of these barns was built on a hilly farm in southern Ohio on a site some distance from the house and about twenty feet higher, in fact the house was on one hill and the barn on another with a small ravine separating them. Two round wooden water tanks were placed near the top

about a barn built after this plan, one of which is the facility of getting all around it. Gates, fences and retaining walls for the bank offer opportunities for stock pens in almost every corner without interfering

of the barn and these tanks were kept supplied by means of a hydraulic ram working from a running spring of pure clear water back among the hills.

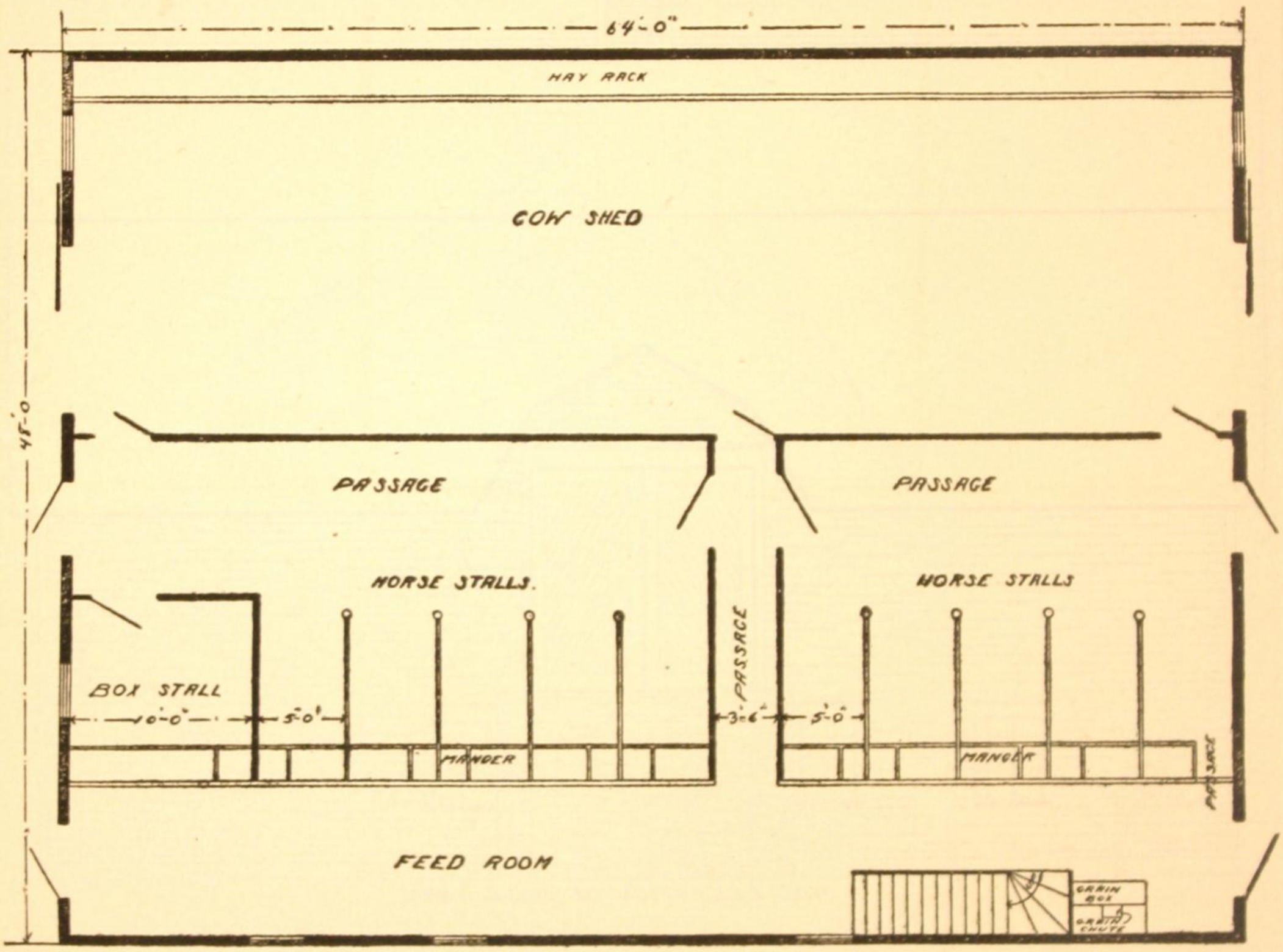
To facilitate cleaning the tanks one at a time, they were connected at the bottom with a short pipe. In this pipe were two globe valves and between the valves was the outlet pipe to the house and to the stock watering troughs.

The pipe that brought the supply from the spring entered the tops of both tanks in a similar way. Two valves in the cross pipe permitted water to flow into either tank or both tanks as desired.

This arrangement of feed and outlet pipes made provision for emptying and cleaning either tank at any time without interfering with the water supply because the other tank could be continued in use. In practice it was found desirable to clean both tanks twice each year because if left longer they were inclined to become slimy.

About seventy-five head of cattle and horses were kept on the farm besides other stock and their thrift was due in great measure to the unlimited supply of good water within easy reach at all times where they could drink out of cement troughs and cast iron buckets in convenient places about the stable and nearby pasture lots.

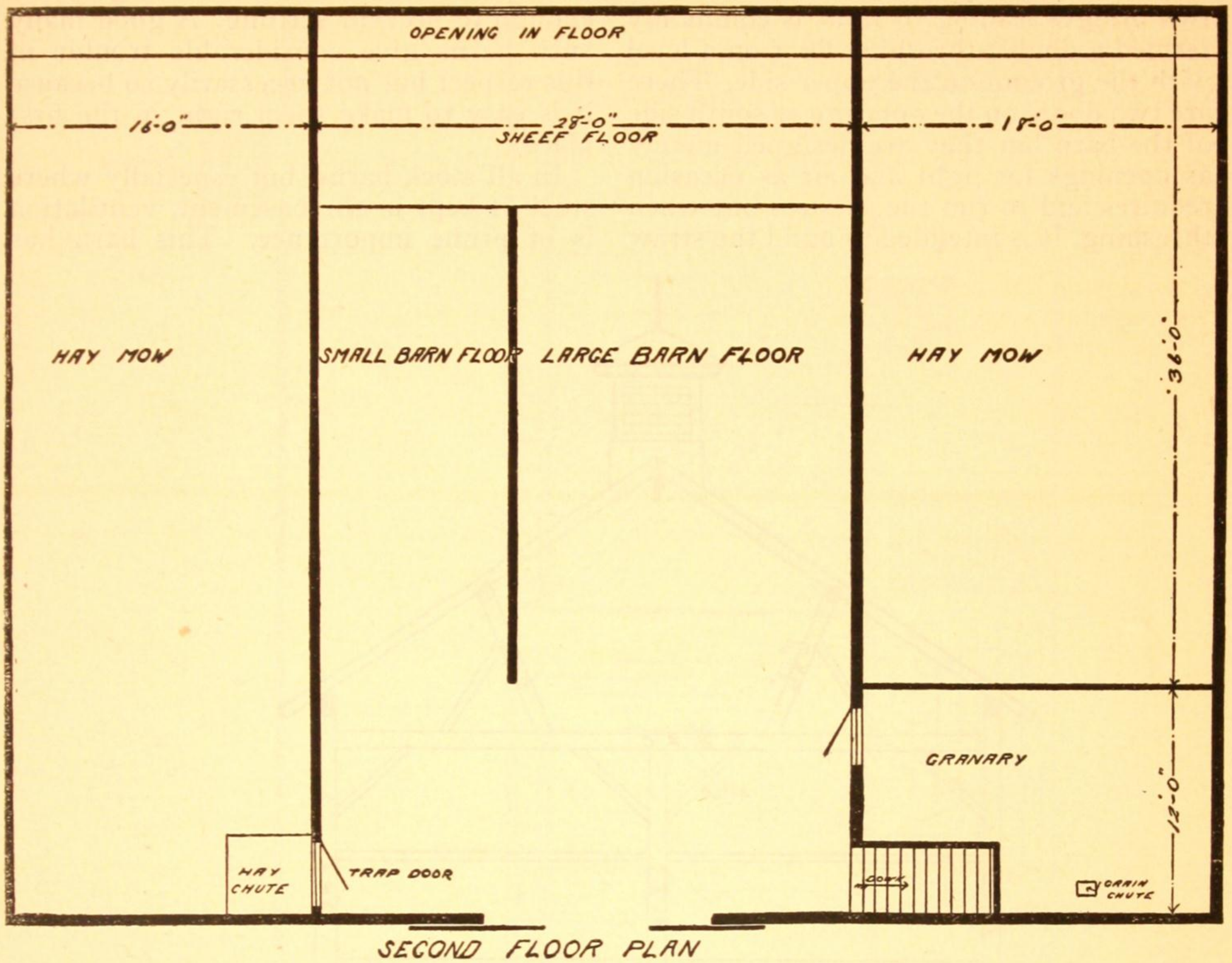
Besides supplying the stock an inch pipe was carried under the ground to the house, which was in this way supplied with hot and cold running water in the kitchen sink and bath room. There was also an outside hose tap for sprinkling the lawn and watering the flower beds. Another hose cock



FIRST FLOOR PLAN

in the carriage house supplied a hose brush for washing buggies.

It might be noted that help stayed along on the farm year after year. One man grew up on the place from a chore-boy and only left to get married and work on a farm of his own. Farm hands are quick to appreciate modern improvements. Farmers who plan right can keep help and make money from their work.



SECOND FLOOR PLAN

LARGE BANK BARN—A166

Cost of Blue Prints, $15.00

A bank barn is very desirable where a suitable location can be found but some bank barns are very inconvenient and others are damp and musty because the barn is not built right. It is not absolutely necessary to build a bank barn just because there is a hill on the farm. It is much better to pick out a plan which is suitable for the location than to blindly follow the lead of some other farmer. A barn that is all right on one farm may be all wrong on the next farm, so much depends on the use made of it, the kind of farming and the lay of the land.

This bank barn is 30 feet wide by 70 feet long with a basement full size. The walls of the basement are of stone and the upper structure is heavy frame work braced in such a way that a horse fork could be used in the peak with a track clear from obstruction extending from one gable to the other.

There is no objection to making this wall of cement or concrete if stone is

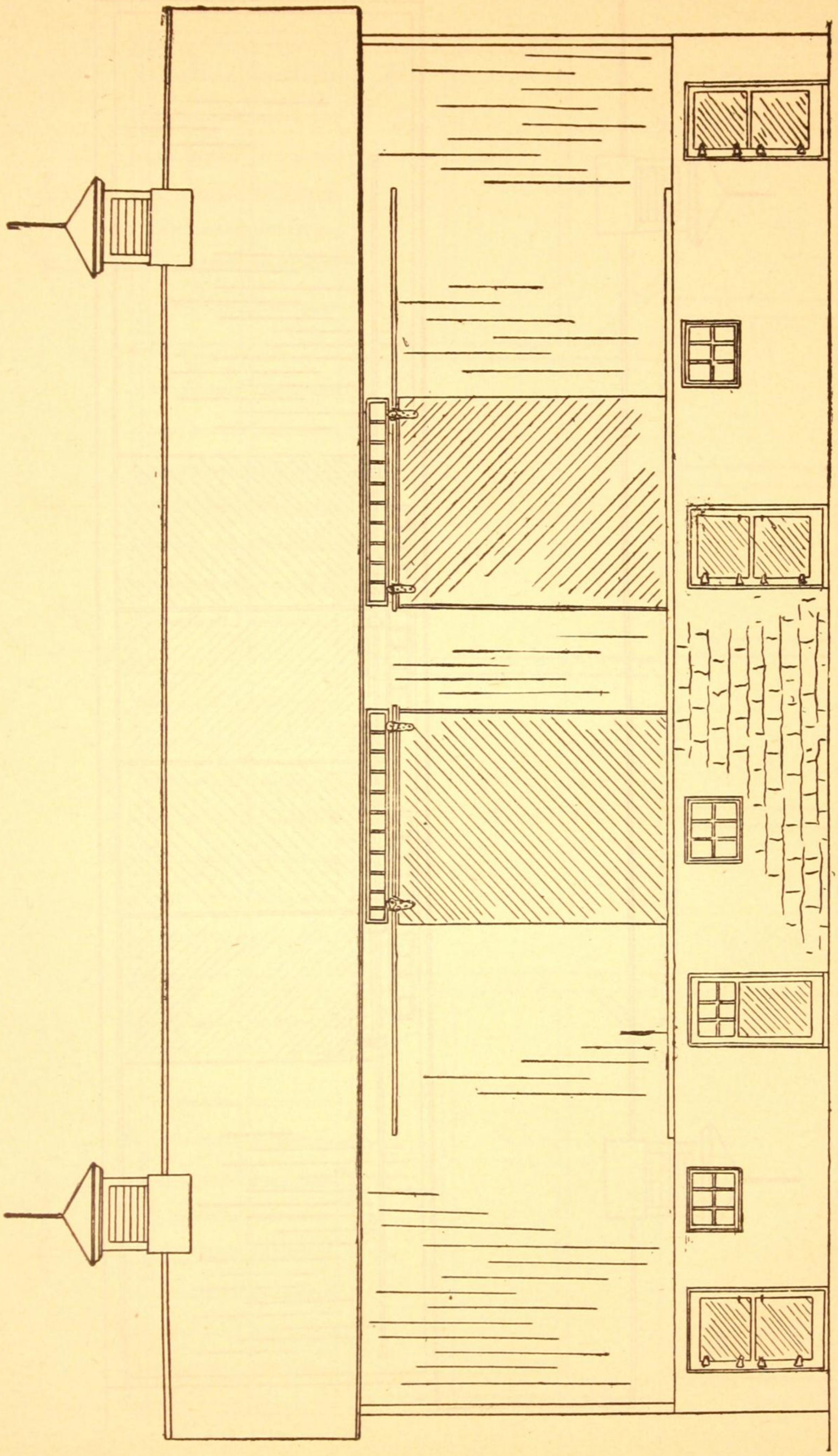
scarce or if for any other reason a farmer prefers cement construction. This barn is placed sideways to the bank and has two bridges leading to what is commonly termed a double threshing floor on a level with the ground on the upper side. There are two doors on the opposite or south side of the barn but they are designed merely as openings for light and air as occasion requires and to run the carriers out when threshing. It is intended to build the straw stack in the yard on this lower side of the barn.

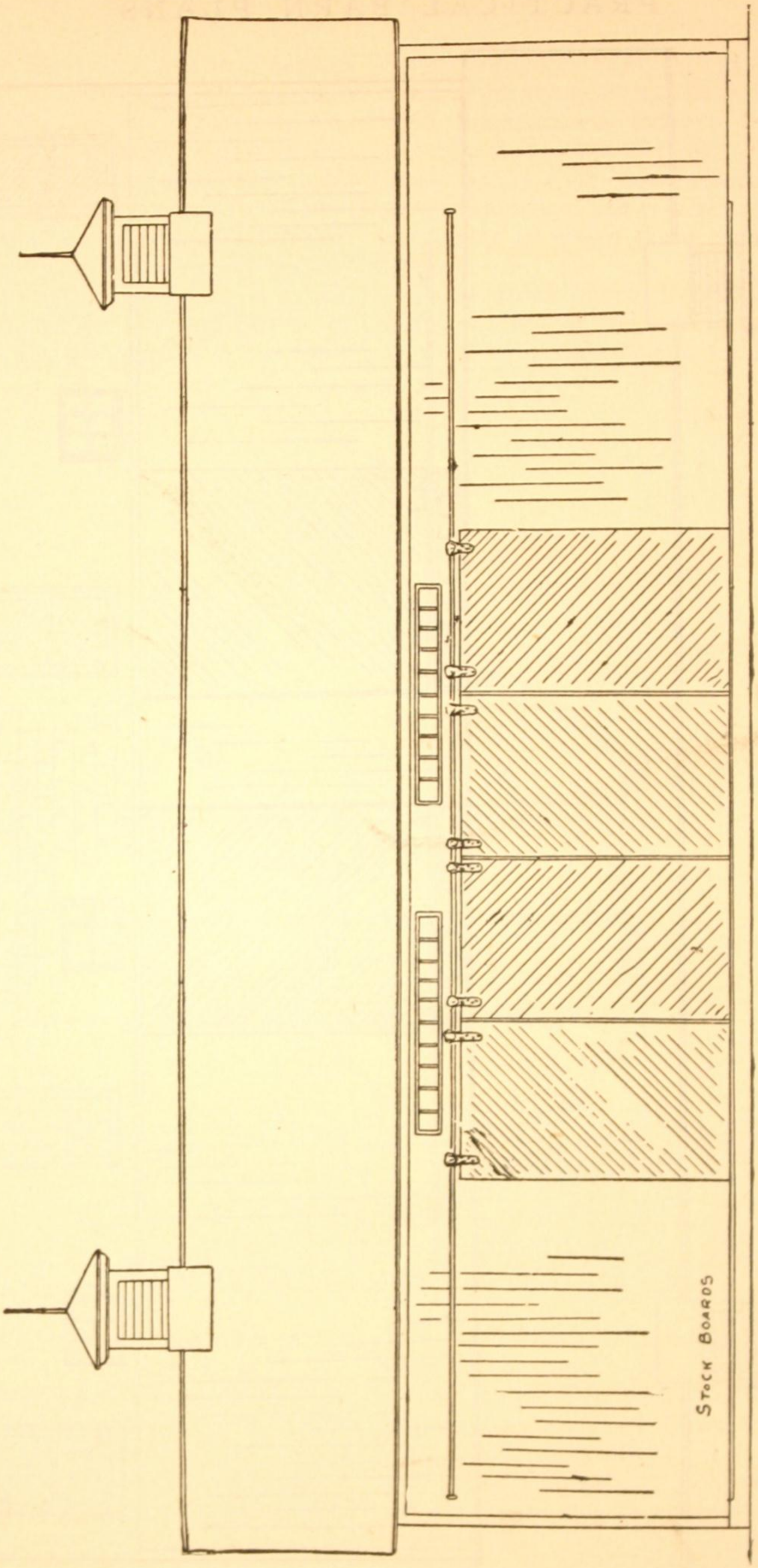
The basement is partitioned off into stables for six horses and twenty head of cattle as shown in the basement plan.

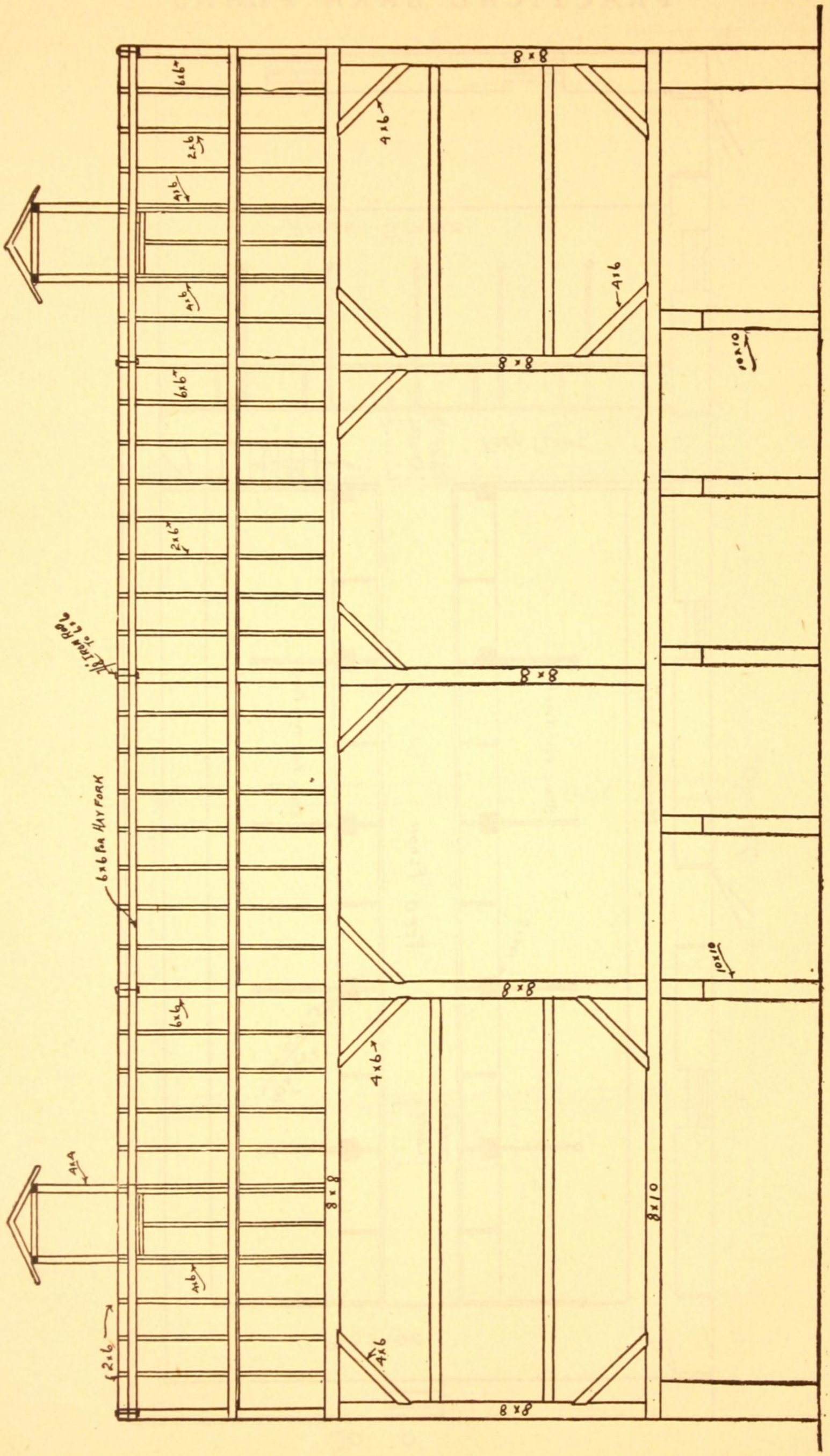
In building a barn like this it is necessary to use heavy timbers over the stable and to support them with good solid posts with good stone foundation or thoroughly well constructed cement footings solid enough to prevent settling. A good many such barns give considerable trouble in this respect but not necessarily so because it is easy to make them right in the first place.

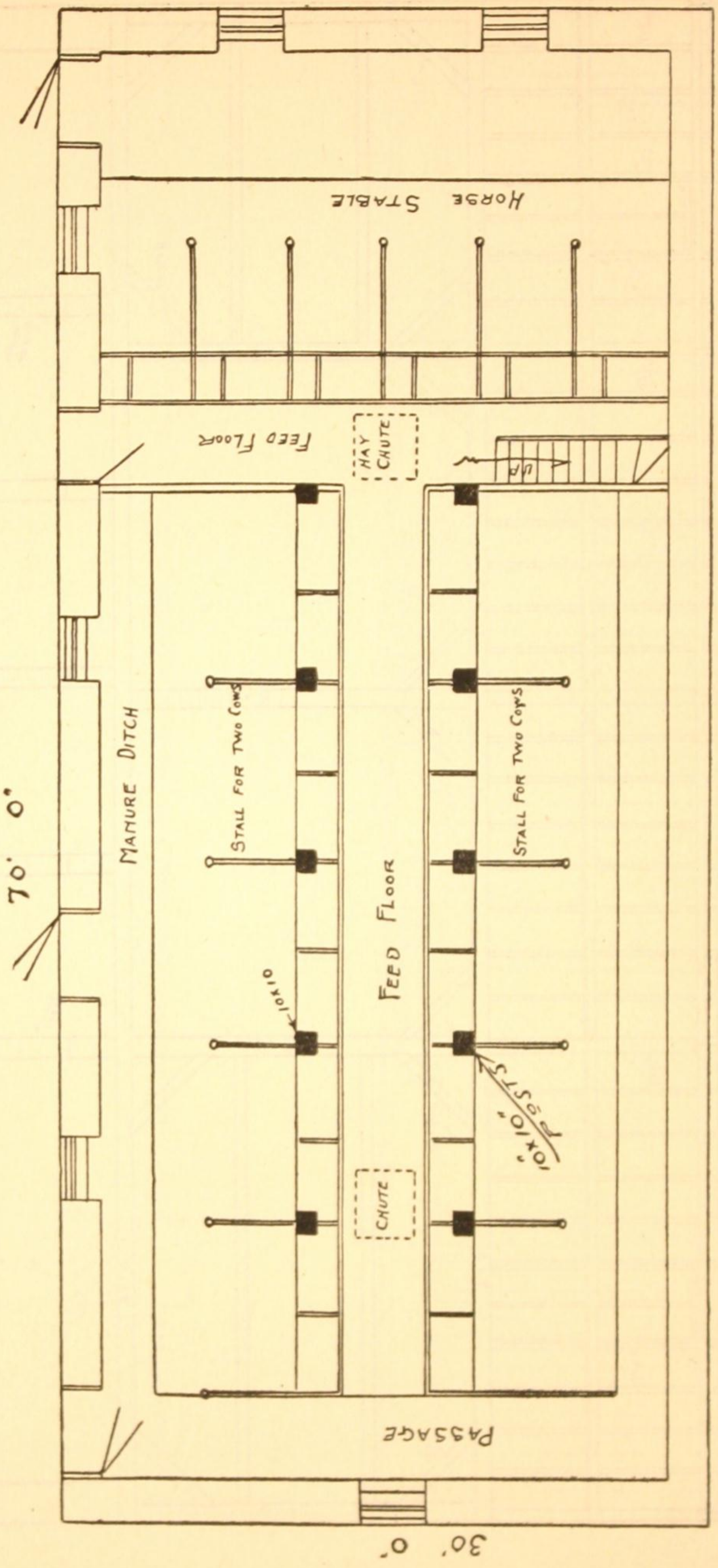
In all stock barns, but especially where stock is kept in the basement, ventilation is of prime importance. This barn has two ventilators extending through the roof at the peak.

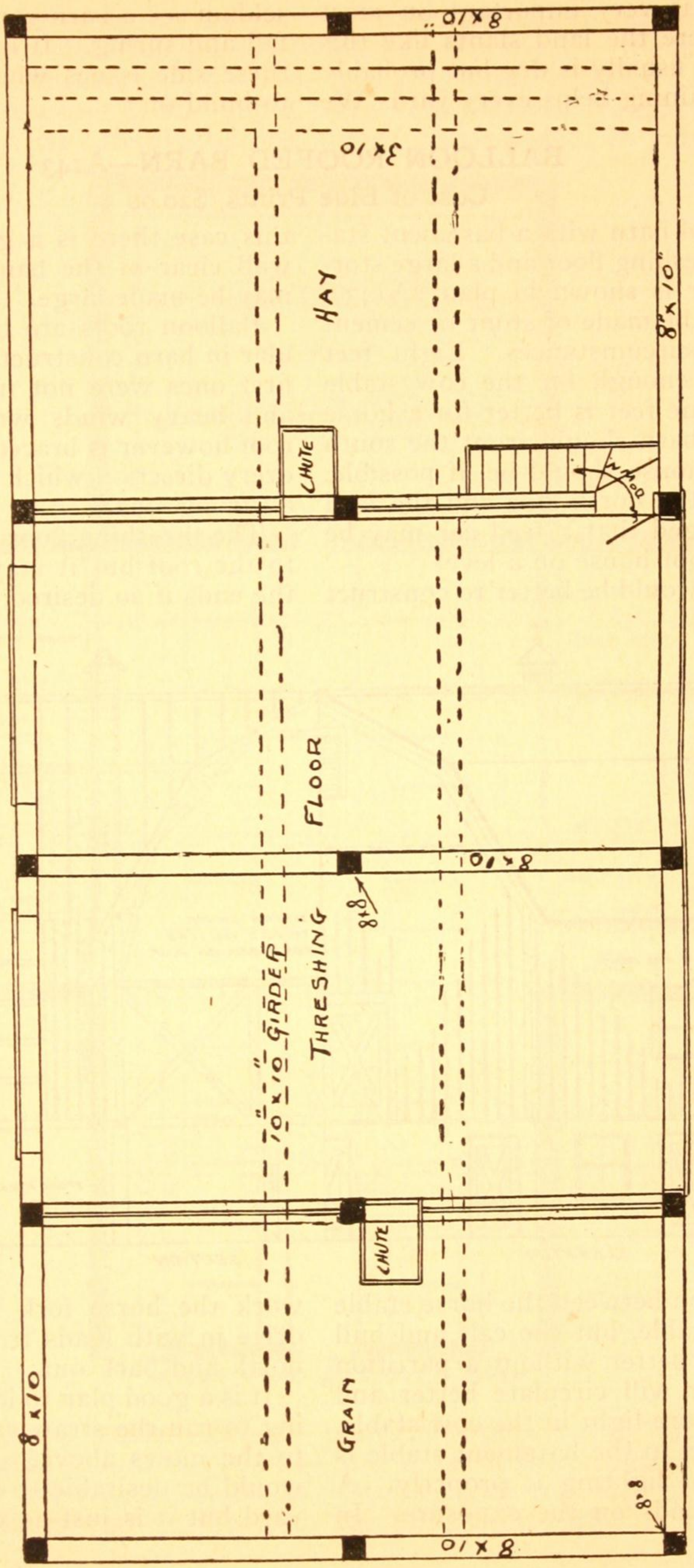
For convenience in feeding there are two chutes running down from the hay mow to the feed alleys on the stable floor. The double threshing floor leaves considerable room for storage of farm imple-




STOCK BOARDS


8x8
4x6
4x6
4x6
4x6
4x6
8x8
10x10
8x8
2x6
4x6
6 x 6 Ba Hay Fork
8x8
6x6
4x6
4x6
4x6
8x8
8x10
10x10
8x8


Horse Stable
Feed Floor
Hay Chute
Manure Ditch
Stall for Two Cows
10x10
Feed Floor
Stall for Two Cows
10x10 Posts
Chute
Passage
70' 0"
30' 0"


8 x 10
3 x 10
HAY
CHUTE
8 x 10
10 x 10
FLOOR
THRESHING
8 x 8
8 x 10
CHUTE
GRAIN
8 x 8
8 x 10

ments which is very important on most farms. Where the land slants like this the barn yard usually is dry but probably a little tile draining helps every yard. We seldom see a barn yard dry enough in the fall and spring. It is well to consider all these side issues when selecting the site to build on.

BALLOON ROOFED BARN—A143

Cost of Blue Prints, $20.00

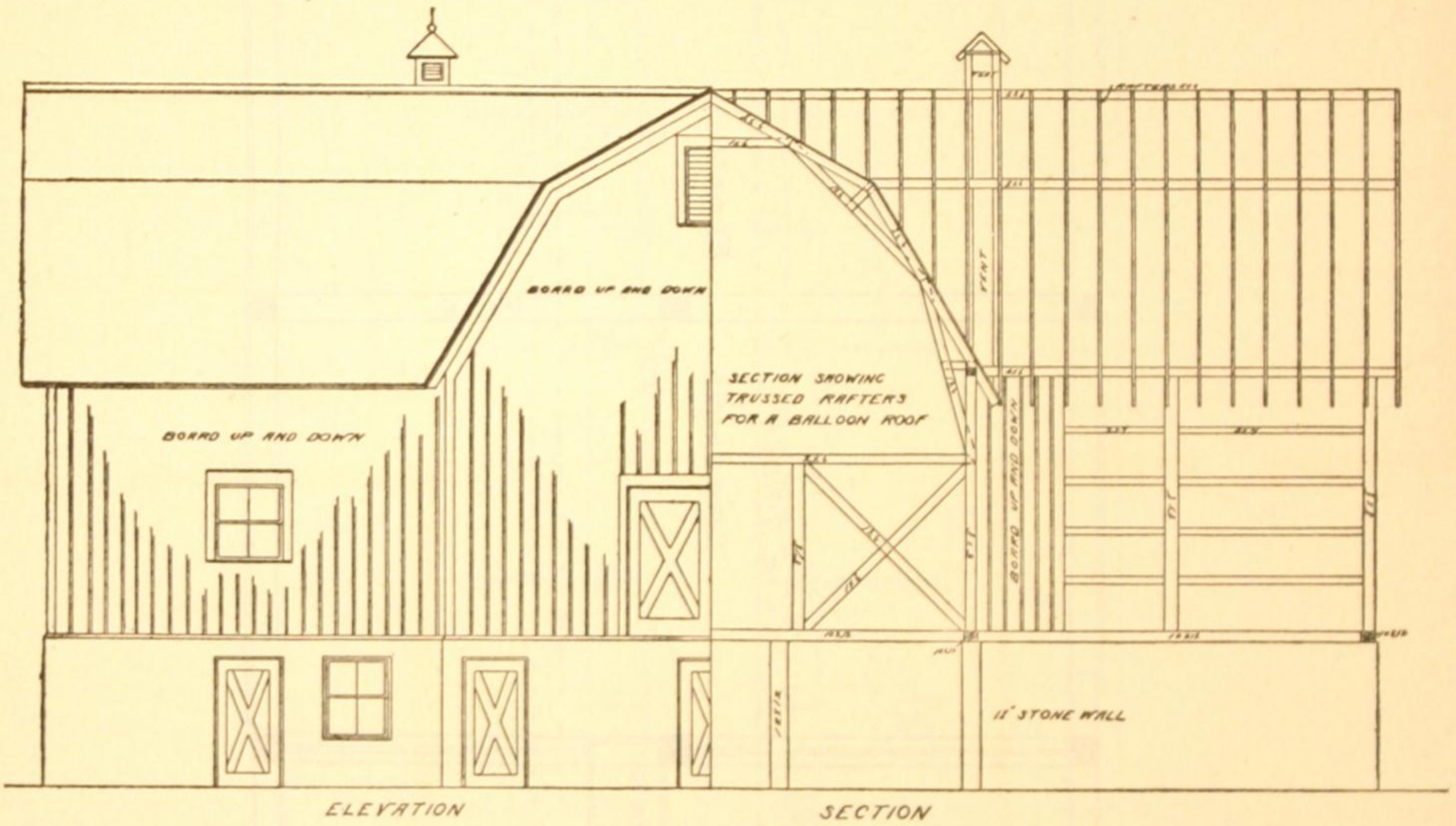
A good sized barn with a basement stable, a good threshing floor and a large storage for fodder is shown in plan (A143). The wall may be made of stone or cement according to circumstances. Eight feet head room is enough for the cow stable but usually nine feet is better for a horse stable. This barn should front the south and the root house should be, if possible, in a bank on the north side and the feed alley so arranged that a feed car may be run into the root house on a level.

It probably would be better to construct a board partition between the horse stable and the cow stable, but the calf and bull pens would be better without a partition because the air will circulate better and there will be more light in the cow stable.

One objection to the basement stable is the difficulty of lighting it properly. A good deal depends on the exposure. In this case there is a good deal of outside wall clear of the bank and the windows may be made large.

Balloon roofs are becoming quite popular in barn construction, but some of the first ones were not made strong enough and heavy winds wrecked them. This roof however is braced by the gables from every direction which makes the structure a strong one.

The threshing floor is open in the center to the roof but it may be floored over at the ends if so desired. The intention is to work the horse fork from this floor; to drive in with loads from the bank at the north and back out.

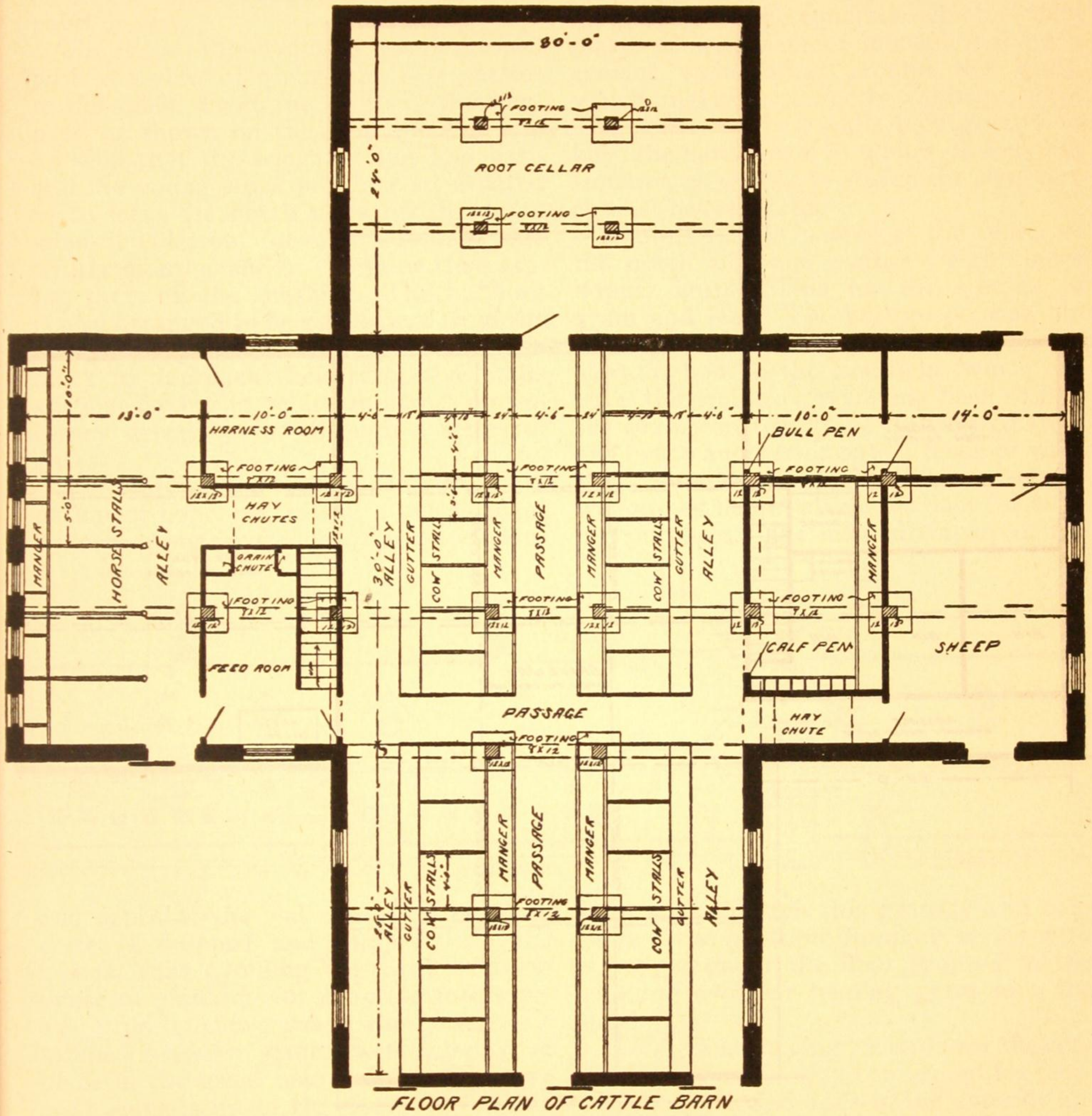


It is a good plan to leave sufficient opening to run the straw carrier or stacker up to the mows above. On most farms it would be desirable to have a stack in the yard but it is just as well to put some of

the straw back in the barn. A balloon roof works splendidly for this purpose. The stacker may be turned to blow the straw to the furtherest end of any gable.

It is a good plan to pay careful attention

It will be noticed that two hay chutes are provided to carry the hay down to the feed alleys. Hay chutes are a great convenience but they are draughty things unless doors are provided. In putting in the up-

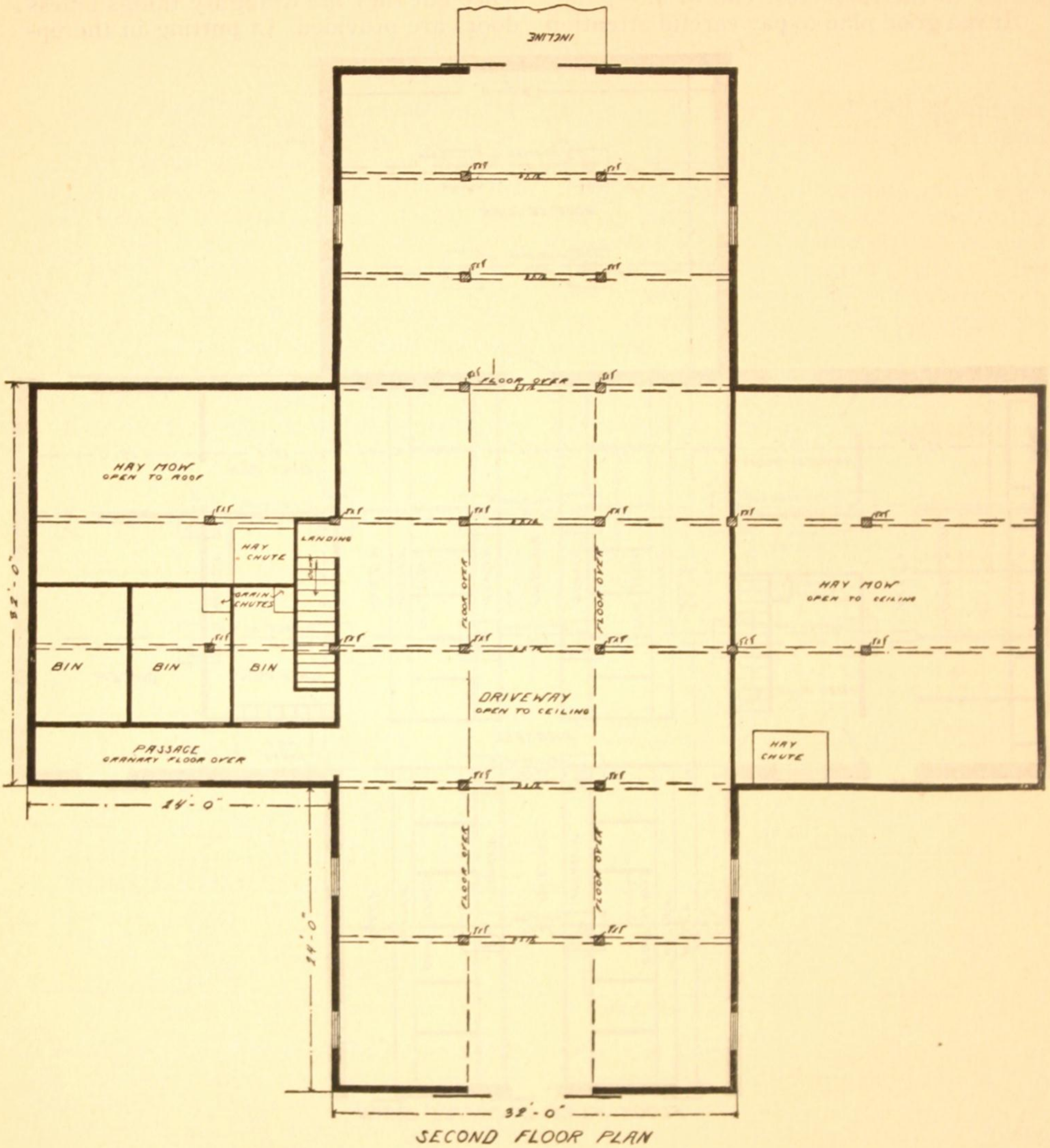


FLOOR PLAN OF CATTLE BARN

to the ventilation of any stable. The air in a basement stable is seldom as good as it should be. There are two air shafts in this plan with openings near the floor.

per floor timbers and joists it is a good plan to make them continuous by building them up with two inch plank so as to tie the building together in both directions.

Remember in building this barn you have no upper ties and you must support the roof from the frame below, but this is easary than the one shown in the plan. In that case it may be extended to cover the whole floor in the granary wing, which should



SECOND FLOOR PLAN

ily done because of the shape of the building.

Some farmers may need a larger granmake the granary about twenty-two by thirty feet and the hay shoot would pass down through it just the same.

CANADIAN BARN—A183

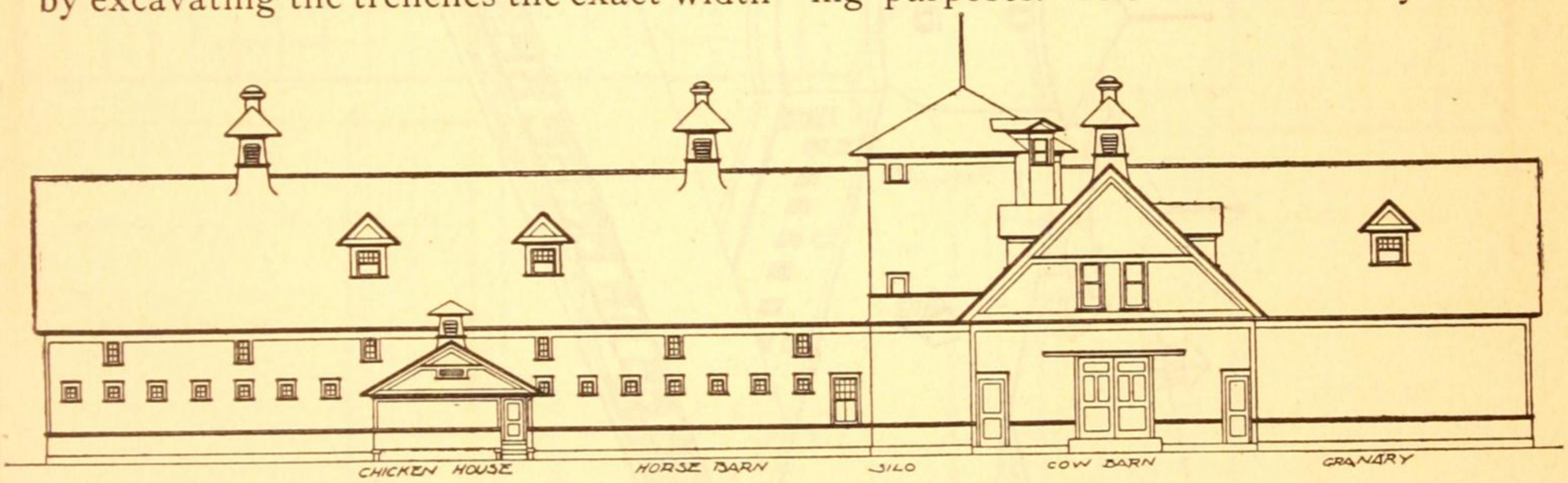
Cost of Blue Prints, $250.00

This large stock and dairy barn was designed for a large Canadian farm and has many good features worth noting, both from the builder's and the dairyman's point of view.

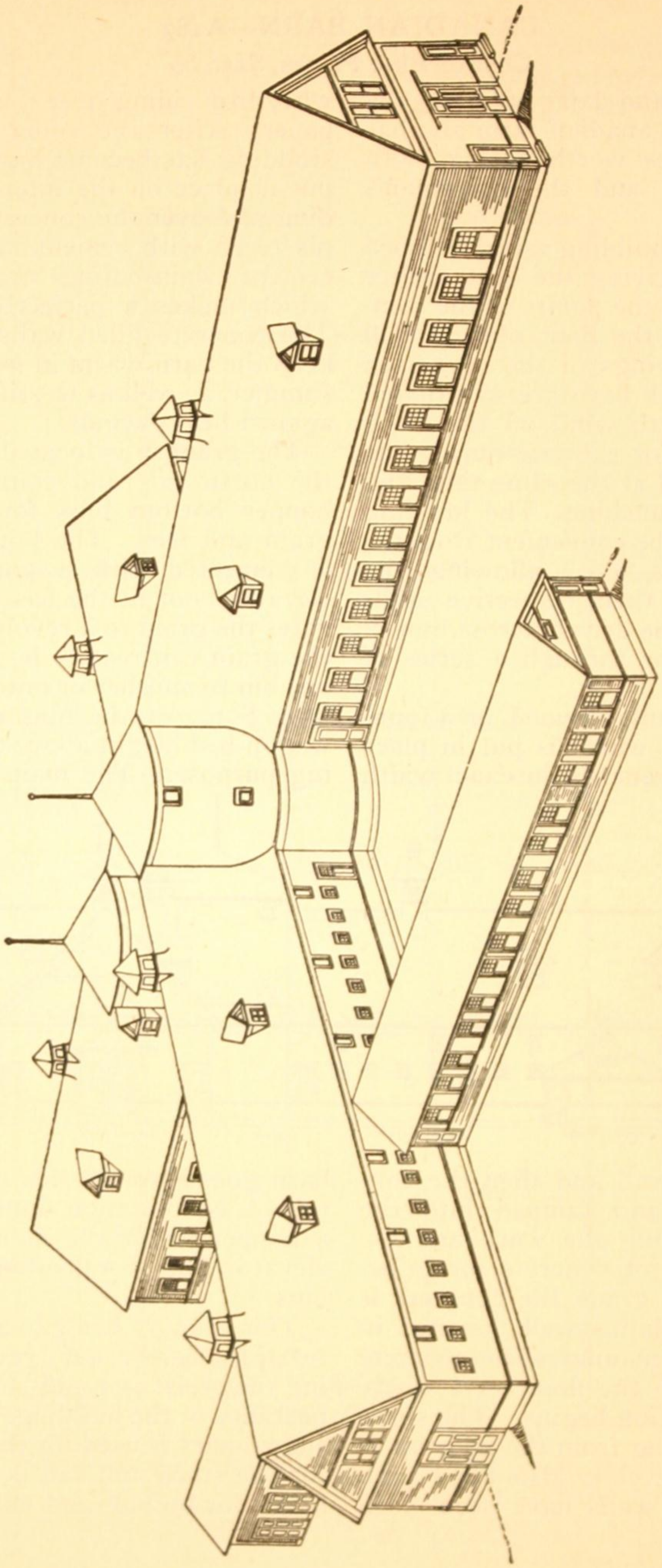
The shape of the building was developed with the view of giving the best shelter to the stock. From the points of the compass, as shown on the floor plan, it will be seen that the wings of the cow barn and the young stock barn are so situated as to keep the north wind off the stock when it is let out for exercise during the winter months, and at the same time giving them all the sunshine. The building is also arranged to be convenient from the paddocks, pastures, etc., allowing the stock to approach their respective stalls without having to be driven across unnecessary driveways or through a series of gates.

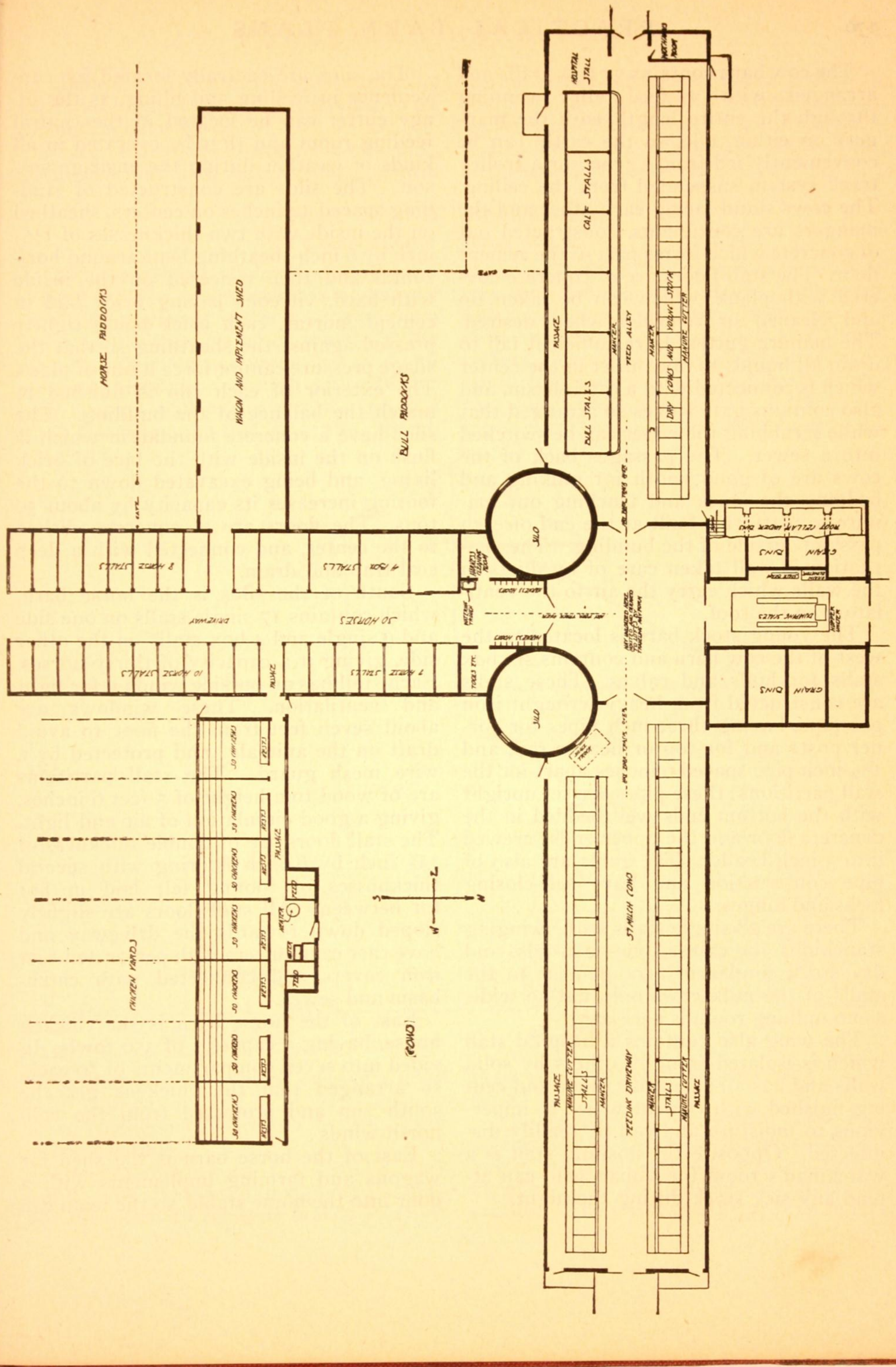
The building is built of wood, on a foundation of concrete, which is put in place by excavating the trenches the exact width and depth of the wall and then the concrete is dumped and tamped into the trench, thus avoiding the work and expense of planking for concrete forms below grade. Above grade the concrete is tamped between planks well fastened in place in the usual manner. The concrete wall extends up to the floor level where the wood construction begins. The space between the studding from the floor up to the window sill level is also filled with concrete after the walls have been sided with drop siding over a layer of thick tar paper. After the concrete between the studding has become hard metal lath are put in place on the interior face of studding and over the concrete, which is then plastered with cement mortar, making a cement wainscoting around the walls, which makes a perfectly sanitary barn. The concrete filled walls help greatly to keep the barn warm in winter and cool in summer, as well as to stiffen the structure against heavy winds.

The granary is located at the center of the north side and contains eight large hopper bottom bins for the storage of grain and feed. The bottom of each bin is connected with a spout leading to an elevator boot in the basement, which elevates the grain to a revolving head so that the grain can readily be transferred from one bin to another or onto a truck or wagons. Some of the bins also have spouts wagon-bed height above the floor for feeding purposes. The main driveway of the barn goes through this granary and contains a combination dumping scales with a hopper under the floor spouted to the elevator boot for loading grain into the bins.



This granary being located near the center of the barn is very convenient for feeding the stock and adds to the exterior appearance of the building. The basement of the granary is used for the storage of roots for the stock and can be equipped with a kettle for boiling and mixing foods, etc.




HORSE PADDOCKS
WAGON AND IMPLEMENT SHED
BULL PADDOCKS
BULL STALLS
PASSAGE
CALF STALLS
MANGER
FEED ALLEY
HAYCHUTE
HOSPITAL STALL
WORKSHOP
DAIRY
COWS
AND
YOUNG
STOCK
MANURE GUTTER
GRAIN BINS
MOTOR CELLAR, MOTOR DRIVE
GRAIN BINS
CLEANING MACHINERY
DRIVING SHAFTS
HOPPER UNDER
SILO
4 HORSE STALLS
8 HORSE STALLS
DRIVEWAY
10 HORSE STALLS
7 HORSE STALLS
TOOLS ETC.
SILO
SILO
CHICKEN YARDS
(ROAD)
N
W
E
S
(ROAD)
PASSAGE
MANURE GUTTER
STALLS
MANGER
FEEDING DRIVEWAY
MANGER
STALLS
MANURE GUTTER
PASSAGE
ST MILLING ROAD

The cow barn contains 57 cow stalls and arranged with a feed alley running through the entire length with the mangers on either side, so the cattle can be conveniently fed from a truck or a trolley track system suspended from the ceiling. The cows stand facing each other and the mangers are continuous, constructed out of concrete which forms part of the cement floor. The stall floors are of concrete covered with plank, which can be taken up and cleaned or renewed when desired. The manure gutters have sufficient fall to drain all liquids to one outlet in the center which is connected with a catch-basin, and also contains gate valves so arranged that while scrubbing the water can be switched into a sewer. The passages back of the cows are of good width for milking and bedding the stock and trucking ont manure to platforms built at the end of each passage outside of the building. The ventilation is well taken care of by ducts in the walls which carry the air to the ventilators on the roof.

The young stock barn is located to the west of the cow barn and contains six box stalls for bulls and calves. These stalls are constructed from heavy wrought iron gas pipe, having three-inch pipes for corner posts and for top or header rail, and 1½-inch pipe spaced 6 inches apart for the stall partitions; these pipes are set upright with the bottom ends well bedded in the concrete floor and the upper ends screwed into 3-inch header. The gates are also of pipe construction and have self-closing locks and hinges.

There are 28 single stalls with swinging stanchions for calves, one-year-olds, and dry stock similar in arrangement to the stalls of the milk cows only not so wide, as no milking room is necessary.

The wing also contains a hospital stall which is isolated from all others by solid walls and has all side walls, floor and ceiling finished with cement which is impervious to moisture and can be readily disinfected. Opposite the hospital stall is a watchman's room for a man who can attend any sick stock during the night.

The silos are centrally located for convenience in feeding and filling, as the silage cutter can be located in the central feeding room and thus be operated in all kinds of weather during the ensilage season. The silos are constructed of studding spaced 12 inches on centers, sheathed on the inside with two thicknesses of 1½-inch by 6 inch sheathing bent around horizontal and then veneered on the inside with hard, vitreous paving brick laid in cement mortar, each brick being tightly pressed against the sheathing so that the silage pressure cannot force it out of place. The exterior of each silo is finished to match the balance of the building. The silos have a concrete foundation which is flush on the inside with the face of brick lining, and being excavated down to the footing increases its capacity by about 50 tons. The floors are of concrete, dished to the center, and connected with a deep seal trap and drain.

South of the silos is the horse barn, which contains 17 single stalls on one side and 9 single and 4 box stalls on the other side, giving it a capacity of thirty horses. Each stall has an outside window for light and ventilation. These windows are about seven feet from the floor to avoid draft on the animals and protected by a wire mesh guard. The stall partitions are of wood to a height of 5 feet 6 inches, giving a good circulation of air and light. The stall floors are of double thickness of 1¾ inch by 6 inch flooring with several thicknesses of roofing felt laid in hot tar between. All stall floors are slightly sloped down towards the driveway and have cast iron gutters with perforated cast iron covers and connected with catch-basin and sewer.

East of the horse barn is the chicken house, having a capacity of 350 fowls, divided into seven compartments of 50 each, so arranged that the chickens get the south sun and protected from the cold north winds.

East of the horse barn is the shed for wagons and farming implements with a door into the horse stable, so the team can

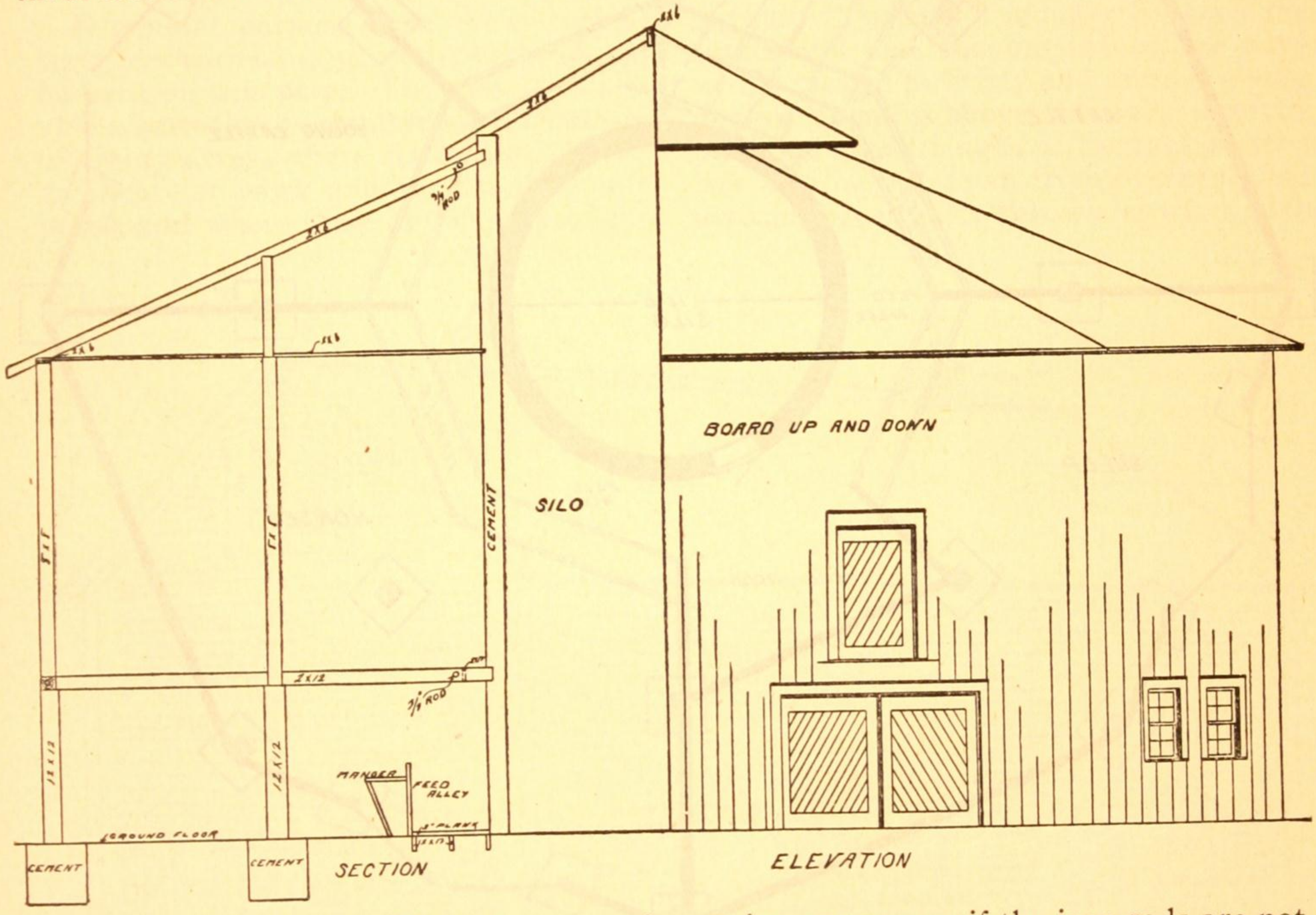
be taken directly from the stable into the shed and hitched up without having to go through a barn yard.

There are many other conveniences about this building, but we must refrain in this article for lack of space. Suffice it, therefore, to conclude in stating that the building is so constructed that any department of the same can at any future time be extended or added to.

AN OCTAGON BARN—A150

Cost of Blue Prints, $15.00

This is a cement silo with a barn built around it. The arrangement is a good one for feeding young cattle to make them grow, rather than to fatten steers for the market. The silo is sixteen feet in diameter and thirty-two feet high with a twelve inch cement wall and a pit that reaches three feet below the surface of the ground.



Three feet is deep enough to give a good solid foundation and it is deep enough when you come to pitch the last silage out of the bottom.

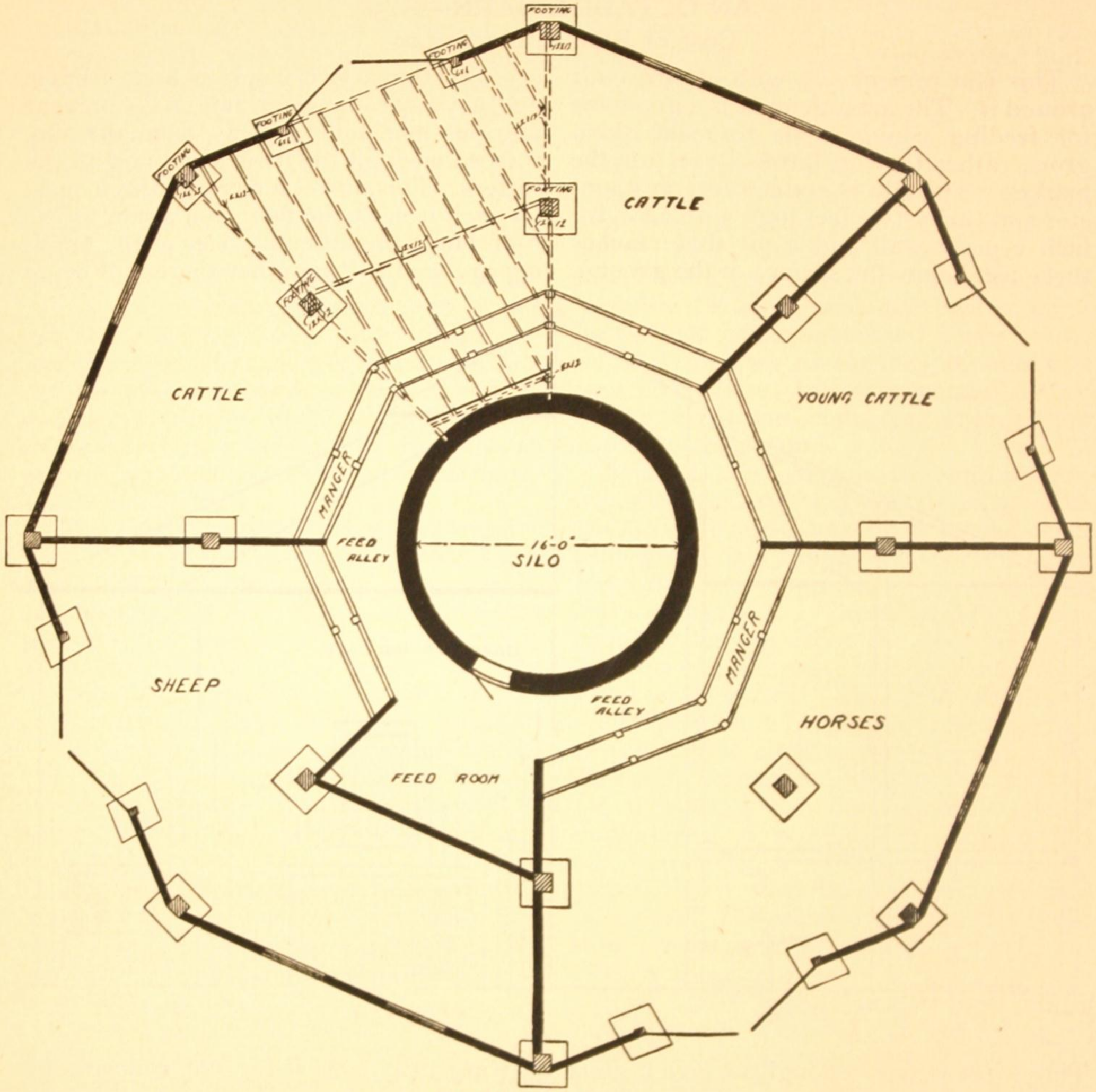
The frame-work of the barn is very light. The silo is used to support the middle and the barn really is braced from every direction. Every side is both a brace and a tie for the next side. To prevent any possible pulling away from the silo, rods connect all the floor joists and all the rafters. This makes a circle of three quarter inch iron at the floor and again at the roof, but if the different sides of the building are well tied together there will be no getting away even if the iron rods are not used.

The octagon construction has been worked out in this plan in preference to a round barn because the construction is cheaper. The sills and other timbers are straight. The joists usually are cut square,

at least there are not very many bevels and when a joist is beveled it is only on one end and the other end is cut square. It is the same with the rafters.

There is considerable room for straw and hay around the silo and it is easy to make places next to the silo for putting both hay and straw down into the feed alley.

The mangers being next to the feed alley makes feeding as easy and convenient as it is possible to have it. Perhaps no other barn construction can offer such advantages at feeding time. The mangers hold hay, corn stalks or other roughage and the bottoms are tight for feeding corn or ensilage. The feed room in front of the silo doors is boarded to the ceiling so that



FLOOR PLAN

ensilage enough for a full feed may be piled up out of the way of the ensilage cart. A packing box with large castors may be used for a silage cart or it may be a well built cart with heavy iron wheels and with hinged sides to drop over to the manger.

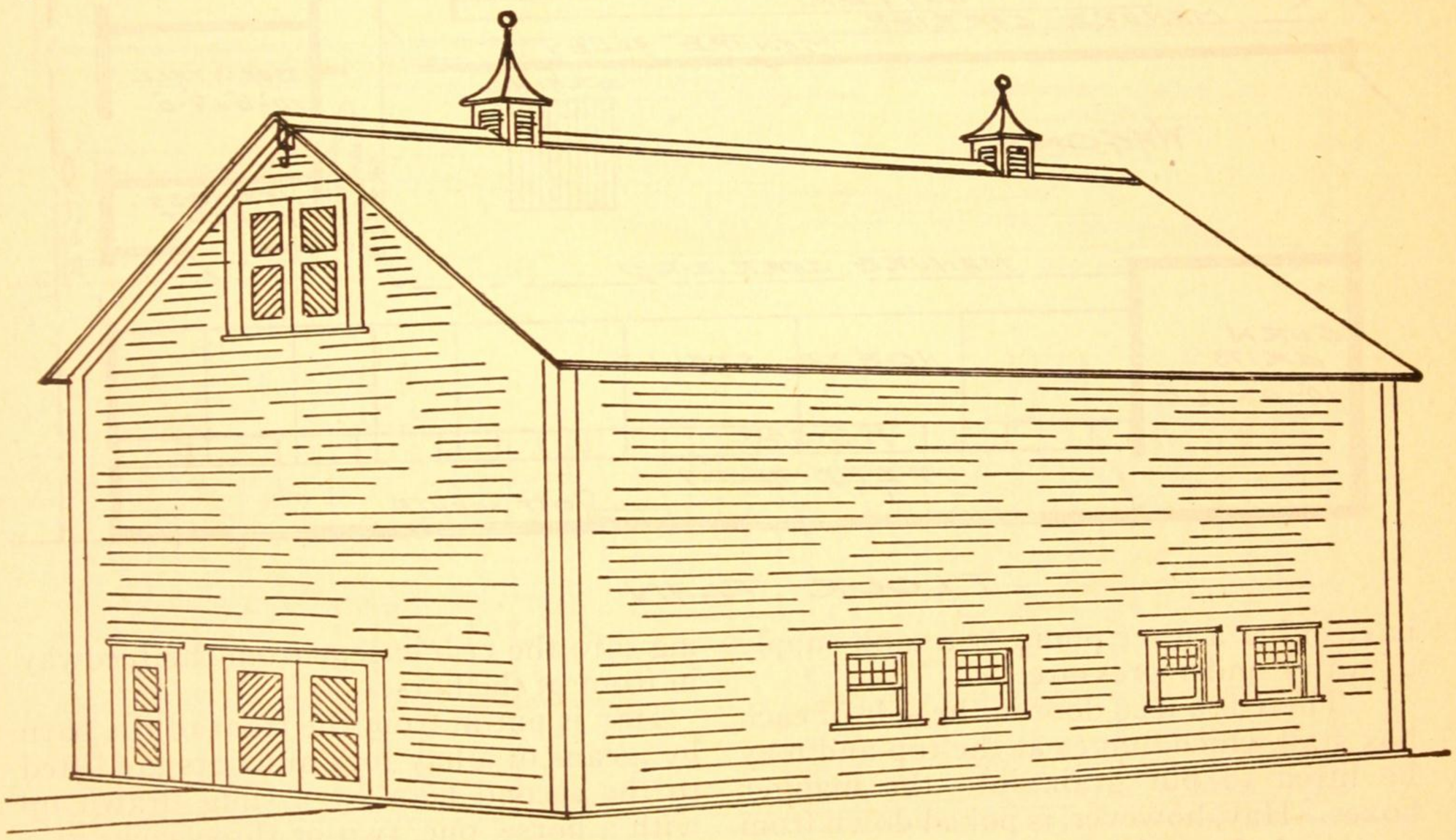
There are four entrances for convenience in getting out the manure and most of them will be used at times for letting stock in or out, especially if the barn is divided up in compartments for the different kinds of stock. Each post has a good cement footing as shown in the plan and the elevation shows the way the timbers run.

There is no floor in the bottom except the ground as it is intended to let the straw and manure accumulate, but there is a good feed room floor as this is where the work is done three or four times a day. A silo surrounded like this must be filled with a carrier. A blast stack will not work well on an incline and it is not convenient to place the cutter close to the silo, but a good carrier works all right.

EIGHTY ACRE FARM BARN—A211

Cost of Blue Prints, $10.00

A general purpose barn thirty-two by sixty feet with storage room overhead may be built on this plan. The idea is to provide a barn that is suitable for a farm, say of eighty acres, where six or eight horses are kept for work and for breeding purposes, and where there is a variety of cattle, some milch cows and some growing calves and young stock.



The cow part is partitioned off from the other part of the barn with stanchions facing out. There is a manger between the stanchions and the outside of the barn with a rack to hold hay and there is a long narrow opening above this rack into the mow the whole length of the rack so that hay may be put down from overhead and distributed as it is thrown down, which saves once or twice handling when compared with feeding arrangements in some other stables.

A manure carrier runs on a track behind

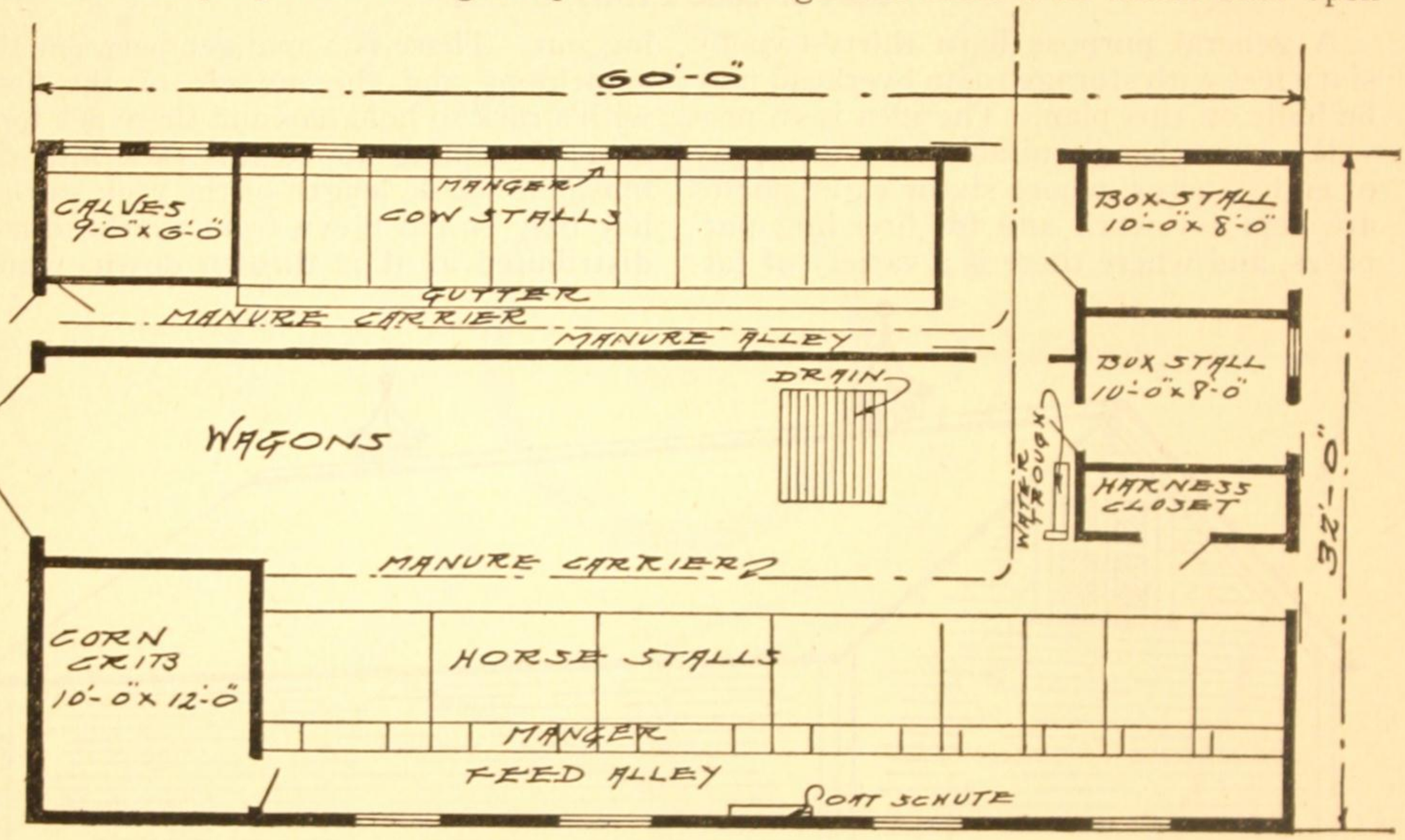
the cows and the same track is extended to run behind the horses with a switch to throw it from one track to the other as needed. Carrying the manure all out at one door leaves the outside of the barn clean on three sides which adds very much to the appearance.

The main entrance is into an alley twelve feet wide which gives storage room for wagons, buggies, etc., and at the back end there are watering arrangements and a depression in the cement floor with a hole in it to carry off the water. In this depression buggies and other rigs are washed and for this purpose it is a good plan to

while other horses are so quarrelsome that they must have separate stalls.

The feedway in front of the horses is narrow because it is not intended to store any feed on this floor, except in the corn-crib. There is a chute from the oat bin above with just a small box at the bottom to dip from. There is a lid to this box which shuts down in such a way that a horse could not lift it even if it should get loose and crowd into this narrow feedway.

The corn-crib portion is boarded tight on the inside, but the two outer sides are slatted. There are small doors outside near the top of the crib to shovel the corn through and there is no inside door open-



FLOOR PLAN

have either a force pump or a tank supply of water under pressure.

There is a feed door in the side of each box stall which hinges at the top and may be lifted to put grain into the manger boxes. Hay, however, is poked down from overhead through the hay chute. There are four double stalls and four single stalls which is a very good arrangement because some pairs of horses like to stand together

ing into the crib except from the feedway in front of the horses.

Hay is put in from the front of the barn by means of a hay fork and oats are lifted to the second floor by a sling drawn up with a horse, one, two or three sacks at a time.

This arrangement stands all the stock with their heads toward the walls, a different arrangement from most barns. When

the feed is put down from overhead there really is very little objection to an arrangement of this kind in a small barn and there is an advantage so far as the horses are concerned in that they may be unhitched from the wagon, go at once to the watering trough and drink, then find their own stalls without assistance from anybody.

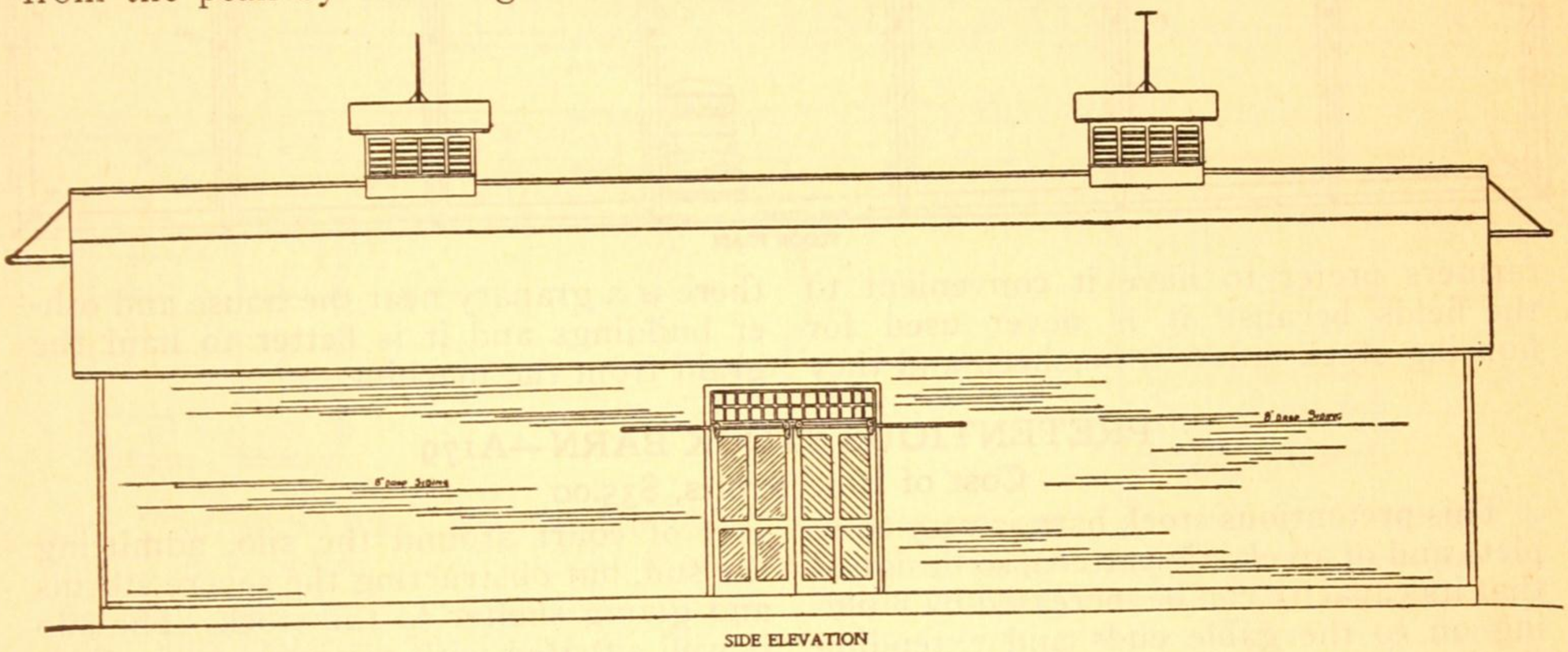
A long narrow harness closet with two doors makes a good place to hang harness so that there is no excuse for having it scattered around on pegs in the way.

HAY AND GRAIN BARN—A167

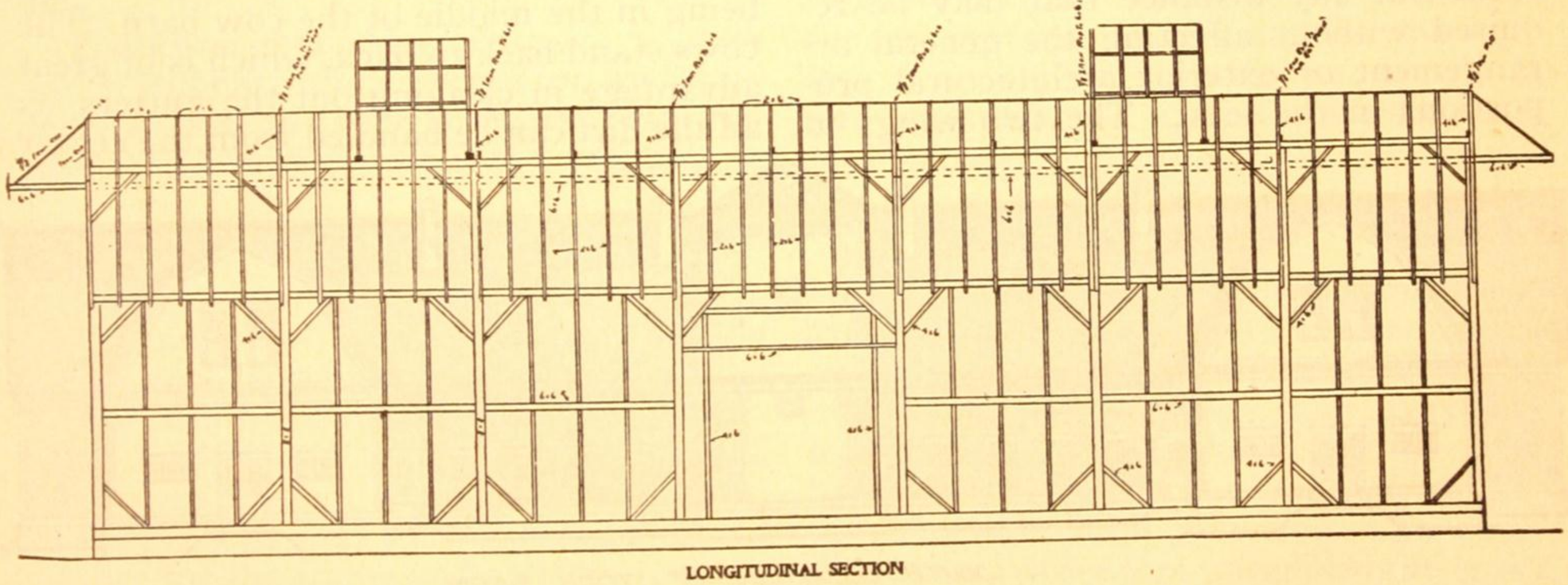
Cost of Blue Prints, $15.00

A long barn designed to hold a good deal of hay and grain is shown in this illustration. It is a timber frame covered with eight inch drop siding.

The track for the hay fork is suspended from the peak by seven-eighth inch iron rods and the track extends the whole length of the building and projects several feet at each end. This arrangement makes it convenient to fill the barn from either end or from both ends as occasion requires. There is a driveway crosswise through the barn at the center. This driveway is floored with a two inch plank floor, but it is not necessary to floor the other part of the building except with round poles to keep the hay and grain sheaves off the ground. Such a barn is intended



SIDE ELEVATION

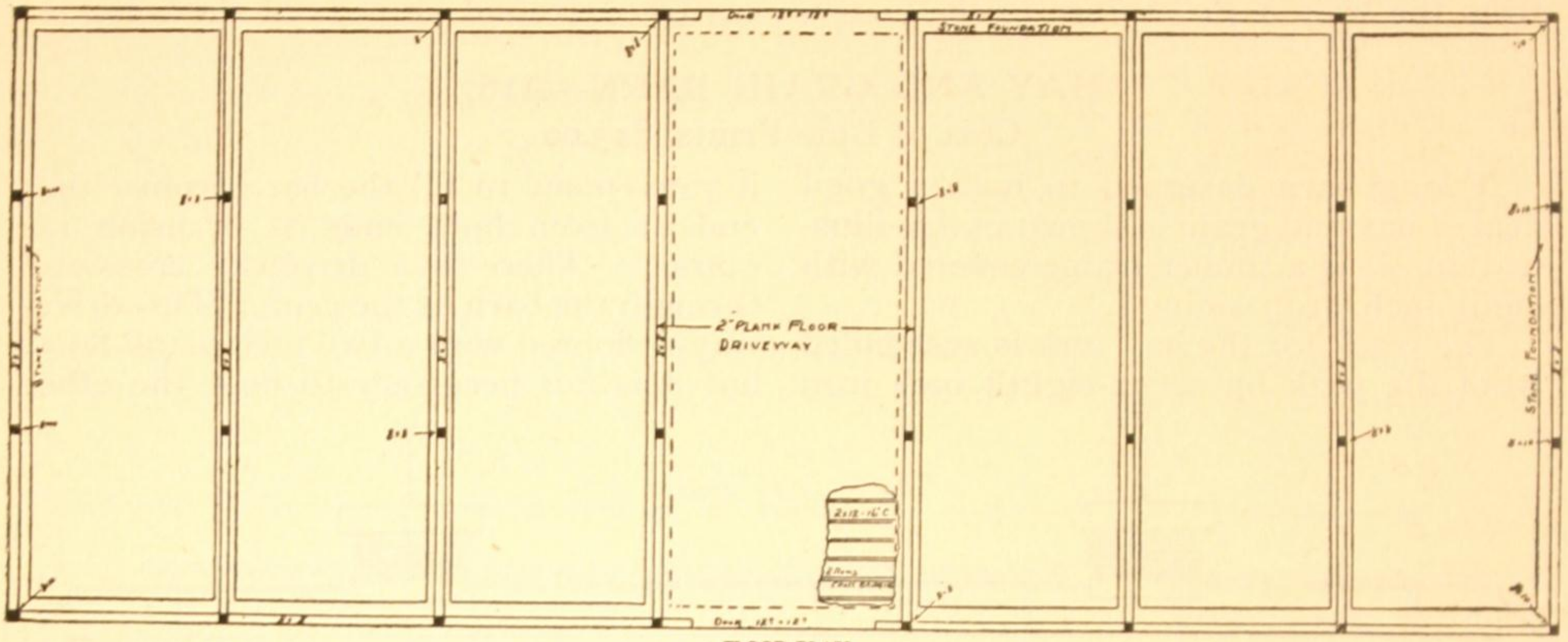


LONGITUDINAL SECTION

more for storage on large farms where considerable grain is harvested and hay cut either to feed or for sale.

It is not necessary to have such a barn near the other farm buildings. Many farmers prefer to have it convenient to the fields because it is never used for housing stock unless it be sheep and they don't require quite such frequent attention as the other animals.

The cross center floor is intended for threshing, but there is no provision for storing threshed grain. It is supposed that there is a granary near the house and other buildings and it is better to haul the grain from the machine.

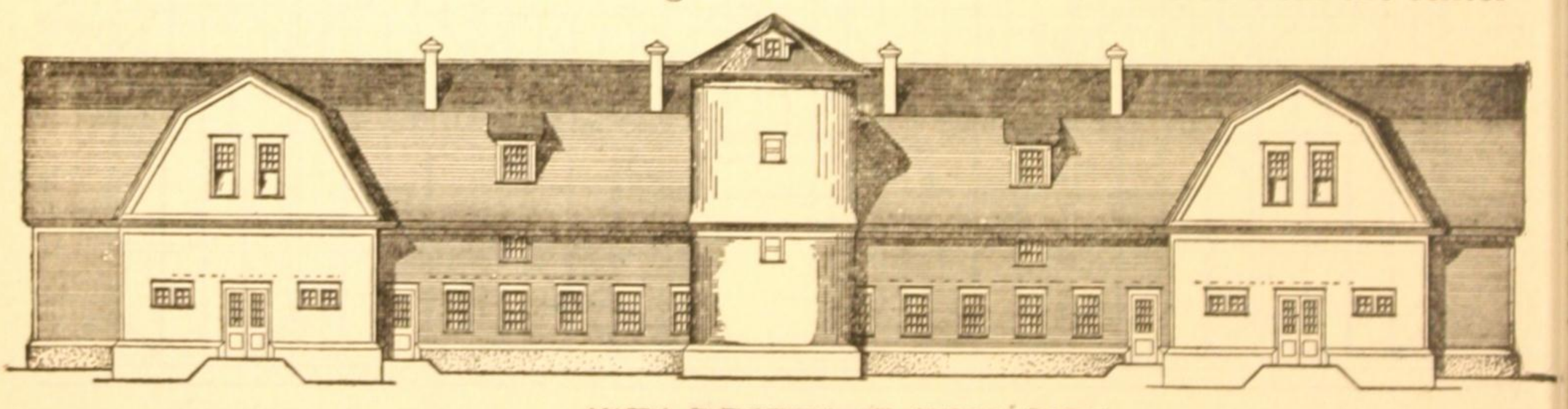


FLOOR PLAN

PRETENTIOUS STOCK BARN—A179

Cost of Blue Prints, $35.00

This pretentious stock barn is very complete and of an elastic pattern, so designed that its capacity can be increased by building on to the gable ends and extending them out any distance that may be required without affecting the general arrangement or exterior architectural proportions in the least. The two wings to the right and left of the silo contain the young stock and horses respectively and face the south. These two wings form a sort of court around the silo, admitting the sun, but obstructing the severe storms and giving shelter to the stock. The silo is well situated with reference to feeding, being in the middle of the cow barn. The cows stand back to back, which is of great advantage in cleaning out the gutters, as all the dirt can be handled from the center driveway and carried to the manure pits to the right. To the left hand or west end of the cow barn is a large room for imple-



SOUTH ELEVATION OF STOCK BARN

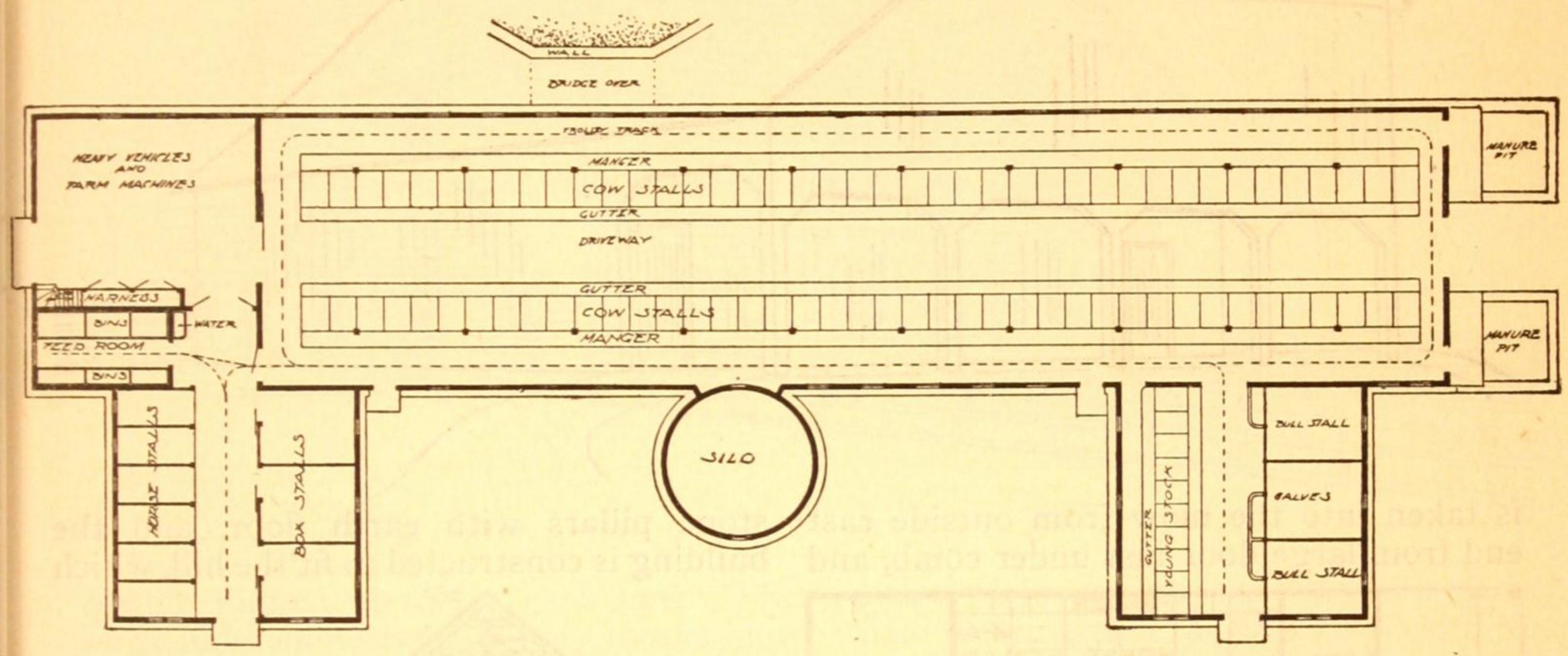
ments, wagons, harness cases and stairways to upper floor which contains grain bins, storage rooms for light machines vehicles, etc., and sufficient hay and feed room for all stock.

This building has a concrete foundation with the concrete walls extending about 2 feet above the cement floor level in the stock rooms. This prevents any moisture from getting to the framework and also makes a very sanitary and durable building. The frame walls are constructed of two by six studding covered with tar paper and drop siding on the outside and tar paper and matched sheathing on the inside.

The lower story has two rows of posts which support the upper floor and also serve to hold the stanchions and stall partitions. The upper story is of a single span, braced roof which allows the free use of a trolley hay fork the full length of the building.

The roof is of green stained shingles, of Dutch colonial architecture, and not only of a very appropriate design, but its shape adds greatly to the storage capacity of hay, grain, etc.

There is an embankment driveway on the north side which admits hay wagons into the upper floor for the unloading of hay, grain, etc. The silo is of frame construction lined on the inside with paving brick, making it absolutely air tight and almost frost proof. There is a trolley track feed carrier hung to the ceiling of the lower story, which simplifies the feeding. The building, as the cut shows it, will accommodate 100 head of cattle and nine horses.

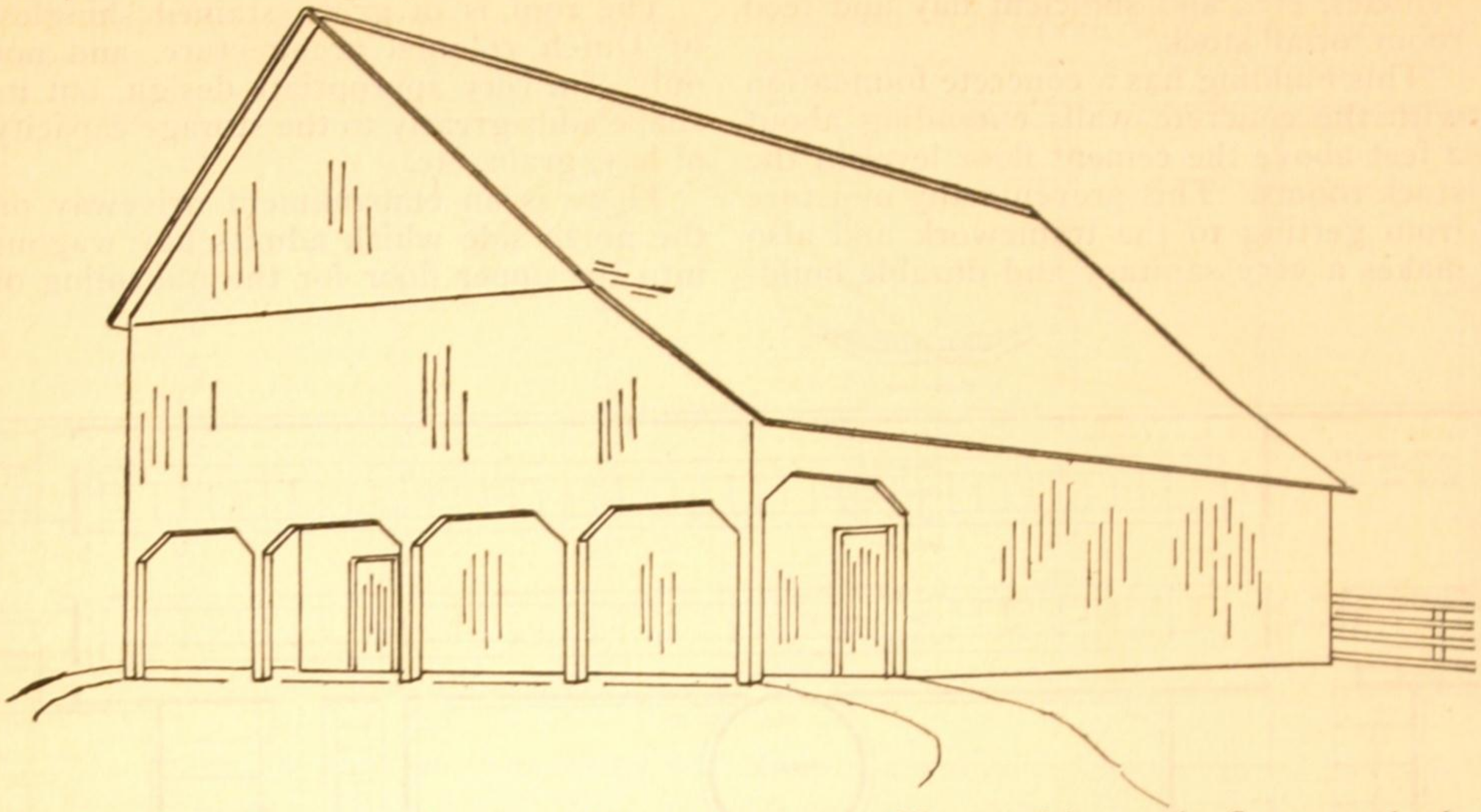


BARN NEAR ST. FRANCISVILLE, ILL.—A188

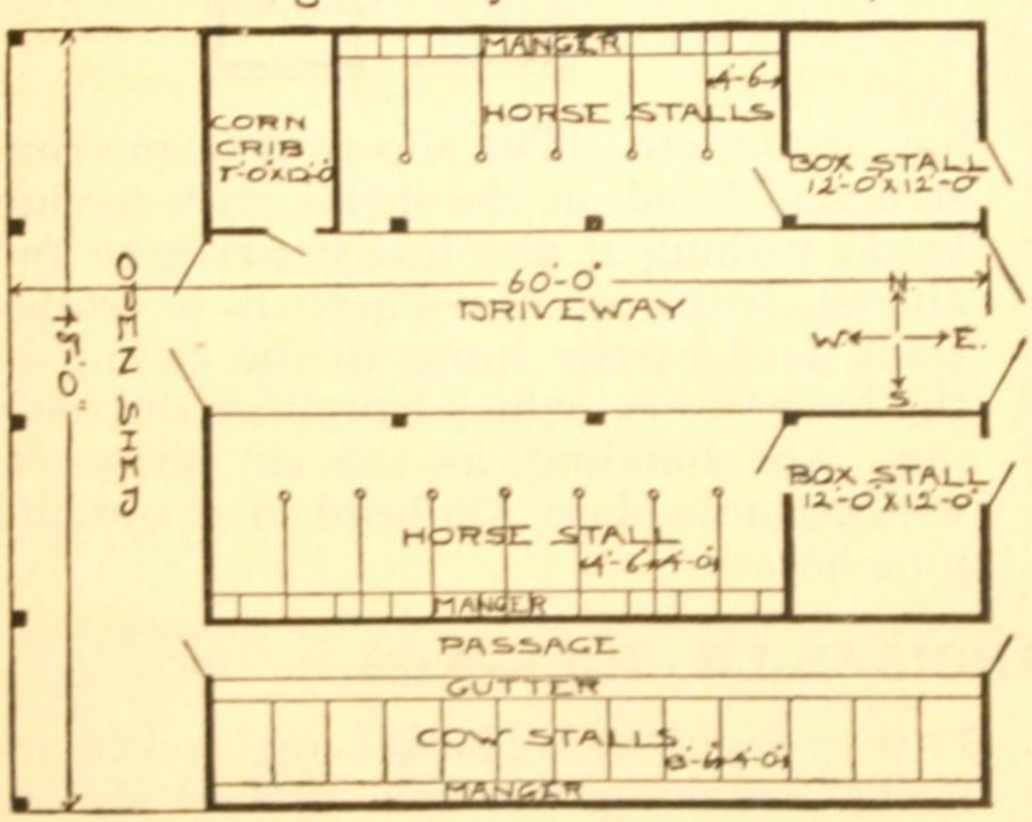
The accompanying is a medium large, plain and very serviceable barn on an eighty acre farm built at very low cost, the timber being furnished and most of the work being done by the farmer himself who owns a small tract of timber from which the logs were cut, furnishing all the lumber for the frame and siding.

The barn is of red oak lumber undressed and unpainted. The frame is what is known here as the "spiked" frame, three two by eight inch plank being spiked together, making finished timber six by eight inches. The barn is sixty by forty-eight feet with twelve foot driveway lengthwise through the center of main building and an inclosed twelve foot shed on the south stabling twelve dairy cows. There is a twelve foot open shed the entire width of the west end. It is twenty feet to the eaves of the main part, fourteen feet to the eaves of south cow shed and thirty-

five feet to the comb. The mow above covers the entire floor, sixty by forty-eight feet, and will hold eighty tons of hay. Hay



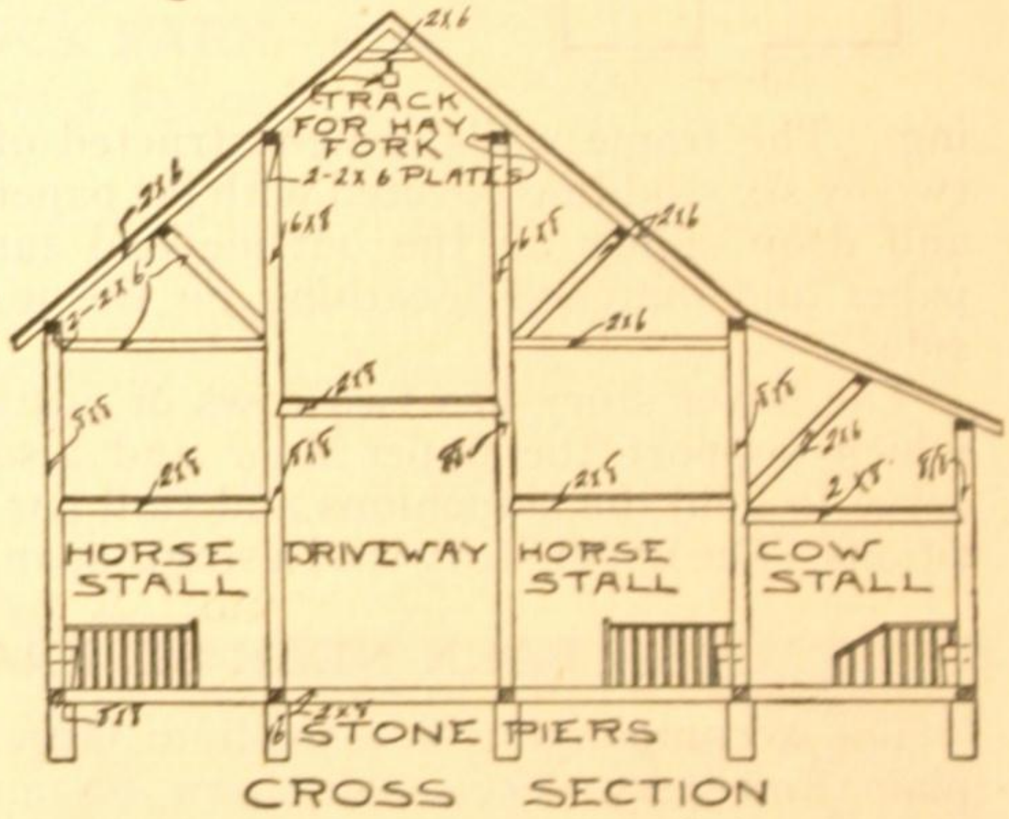
is taken into the mow from outside east end from large door just under comb, and



it has modern equipment of track and hay-fork.

Horse stalls are arranged on either side of the center driveway, the horses facing

stone pillars with earth floor, and the building is constructed to fit the hill, which



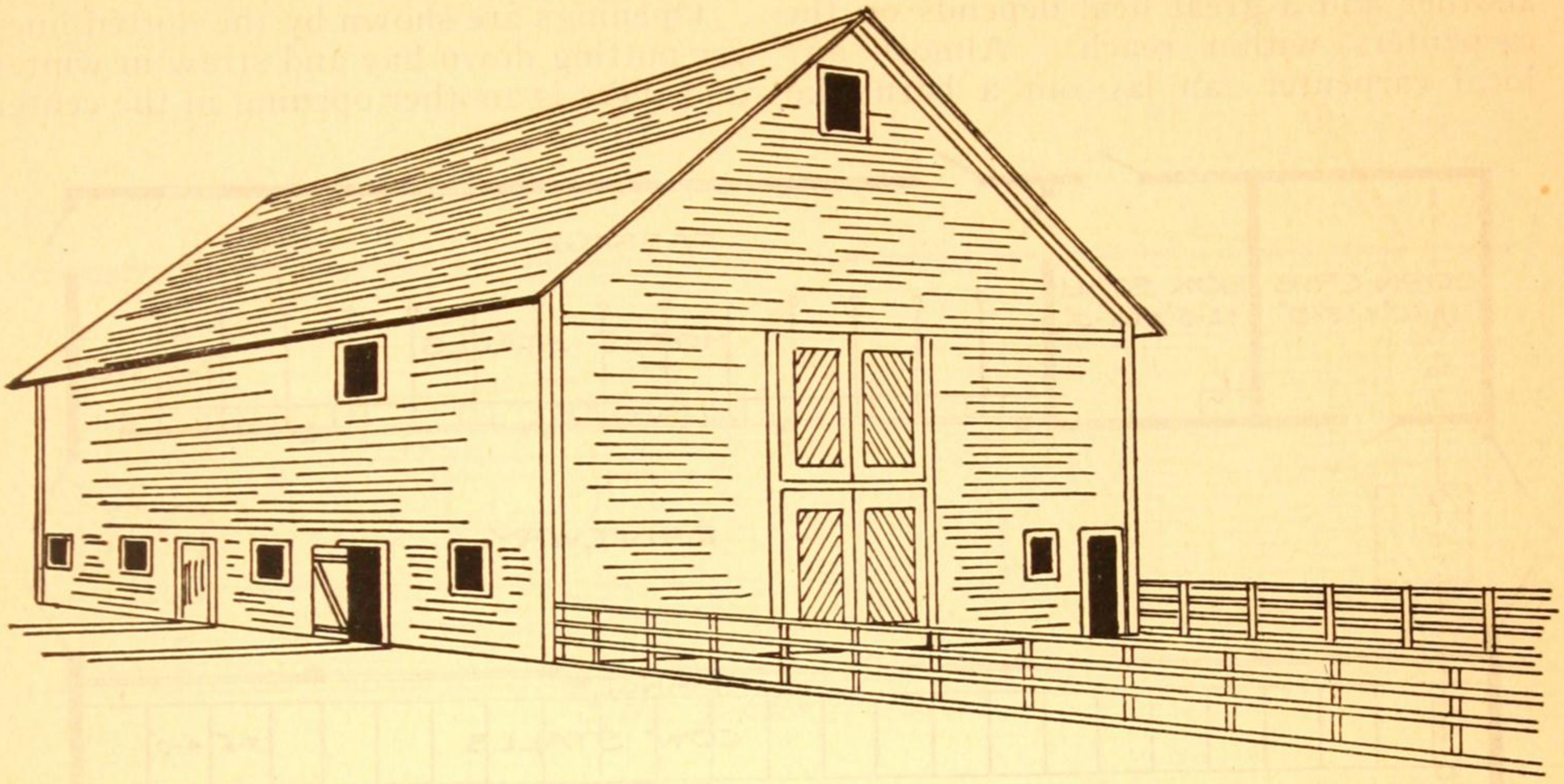
CROSS SECTION

slopes to the west, east posts being shorter and west posts being longer. There is a small corn-crib in the northwest corner. and two box stalls at east end.

WABASH COUNTY, ILL., BARN—A185

A medium large barn on the 160-acre farm of Mr. J. O. Wood, of Wabash Co., Ill., one of the most scientific farmers of the community. It is a plain structure with no sheds, and is ninety feet long by forty-six feet wide by twenty feet to the

eaves and thirty-seven and one-half feet to the comb. The frame work consists of seven bents placed fifteen feet apart. There is a driveway through the center closed with

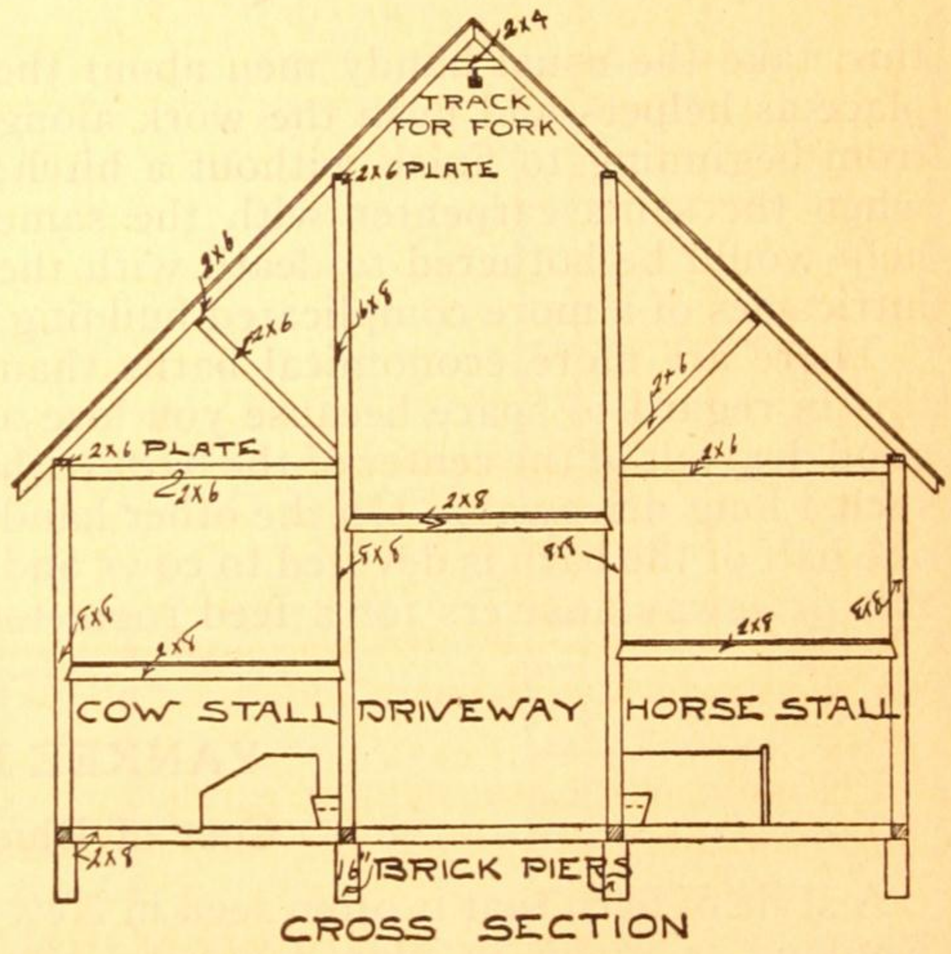


double hinged doors at each end. The large mow above holds ninety to one hundred tons of hay which is taken up inside at the end of the driveway, the floor being afterwards replaced and the section blown full of shredded fodder.

One side below is used for horses and the other for cattle with mangers adjacent to driveway. It will stable fifteen horses and from twenty to forty cattle.

Good ventilation is supplied by small doors on a level with the heads of the animals. The barn is built on solid brick foundation and the frame is of sawed oak timbers; siding is pine ship lap and roof red cedar shingles. It was built in 1903 at a cost of $1,500, Mr. Woods furnishing timber for frame from his own forest and doing all of his own hauling. The only change he would make in building again would be to build four feet higher for greater mow capacity.

This barn is unusually high at the sides. Boards twenty feet long for boarding up and down are not usually easy to obtain and this must be taken into consideration when planning to build. Some farmers when depending on local carpenters prefer to make a building higher at the sides with a plain straight roof like this rather than to undertake a curb roof with the



CROSS SECTION

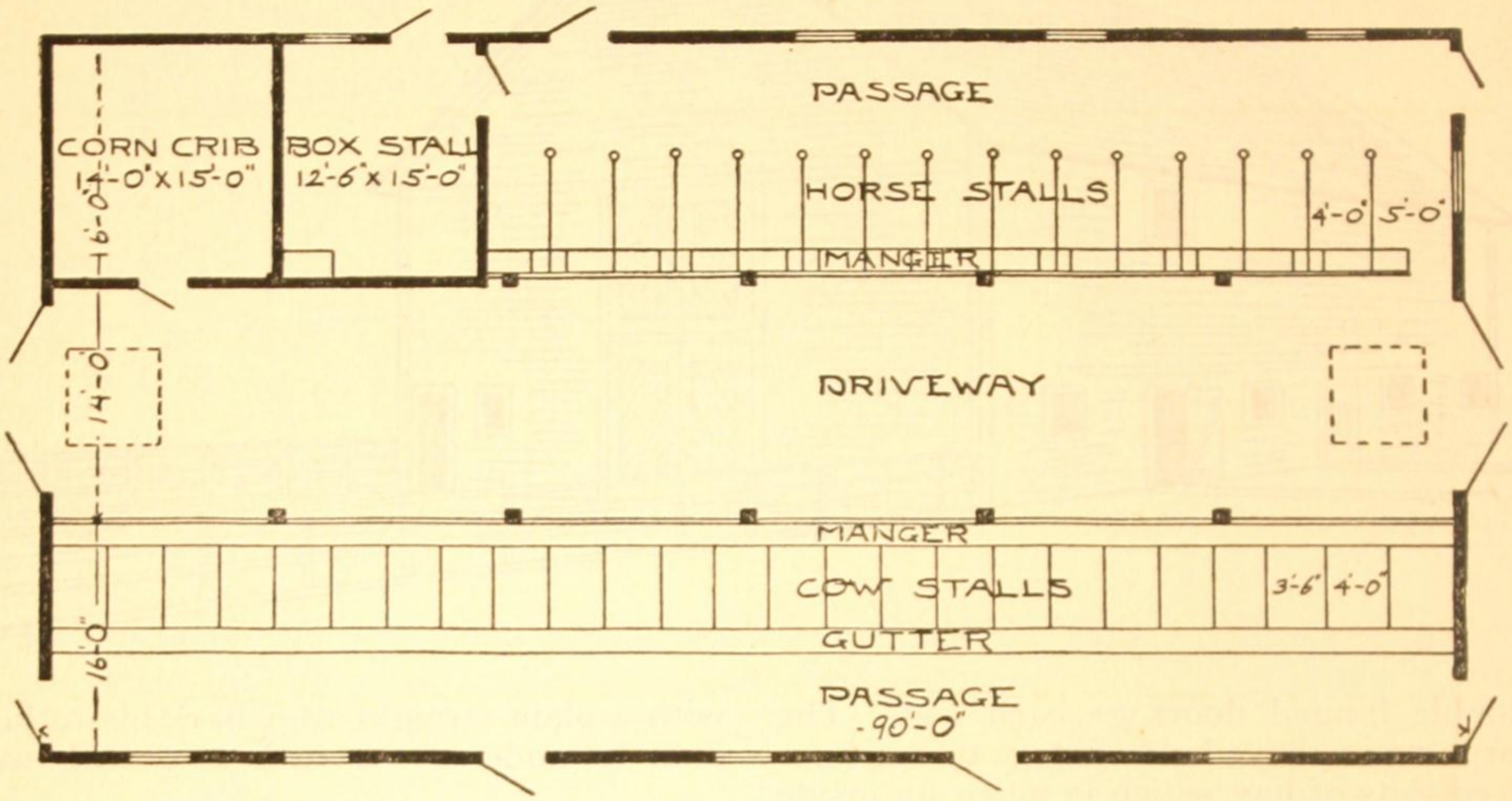
extra skill and care in framing that such a roof entails.

We show this barn as an old fashioned

type that has a great many advocates among practical farmers. There are restrictions in barn building as well as other things. What suits one community or one farmer is not to be recommended for another and a great deal depends on the carpenters within reach. Almost any local carpenter can lay out a barn like this, take the usual handy men about the place as helpers and push the work along from beginning to finish without a hitch; when the same carpenter with the same help would be bothered to death with the intricacies of a more complicated building.

There are more economical barns than this in regard to space because you lose a good deal out of the center of the barn with such a long driveway. On the other hand one half of the barn is devoted to cows and this driveway answers for a feed room to drive through with a hay rack loaded with roughage from the fields for both cows and horses and the driveway is supposed to be floored over with timbers heavy enough to support a mow above.

Openings are shown by the dotted lines for putting down hay and straw in winter and there is another opening in the center for the hay fork in summer when the barn is being filled. This center opening should be covered with poles or planks and hay thrown over it to prevent a draught. The hay chutes should be boxed around and closed at the floor level with weighted trap doors for the same reason. One of the greatest objections to openings of this kind is the draught they create. Ventilation is absolutely necessary where a number of animals are kept together, but ventilation does not mean a draught.

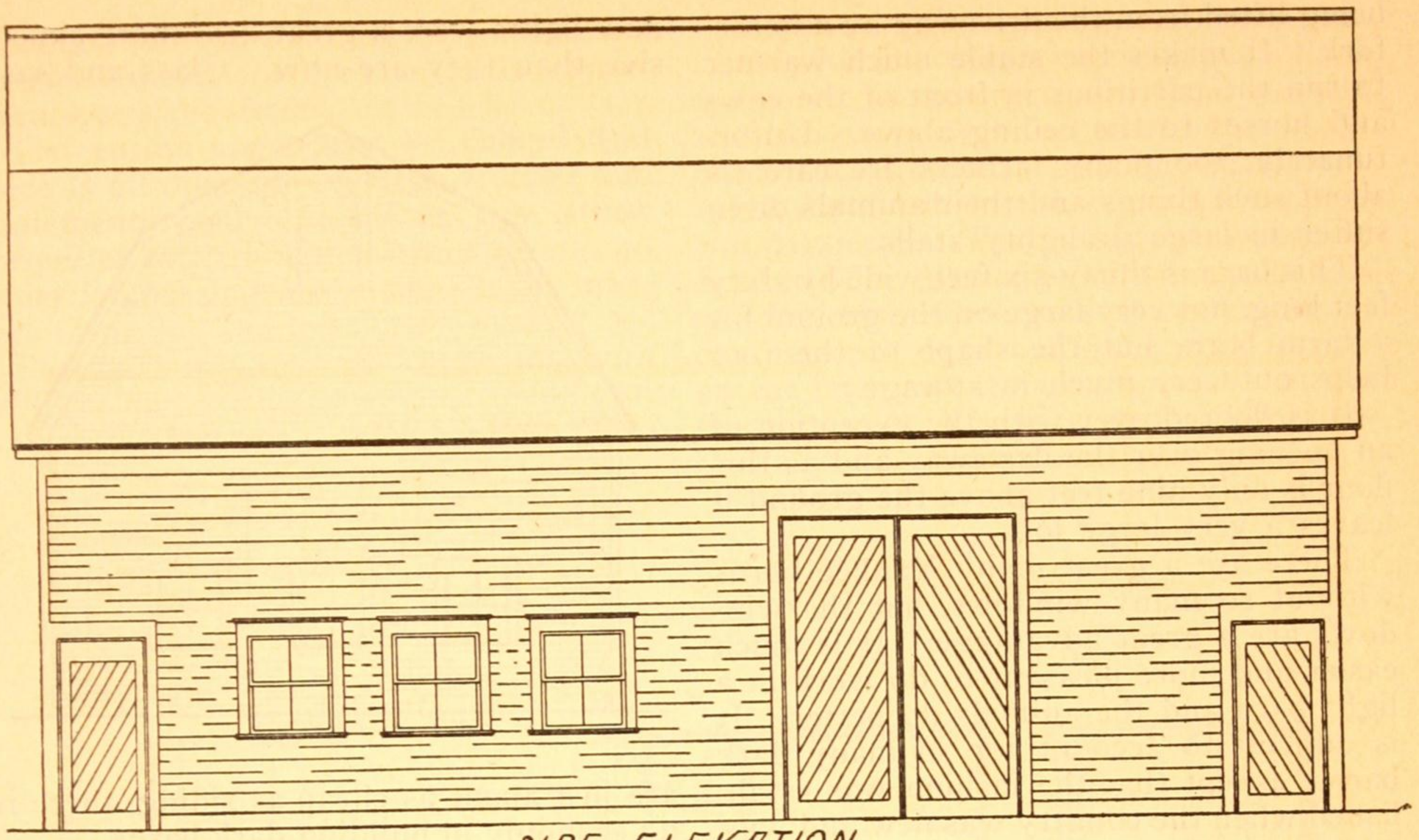


YANKEE BARN—A134

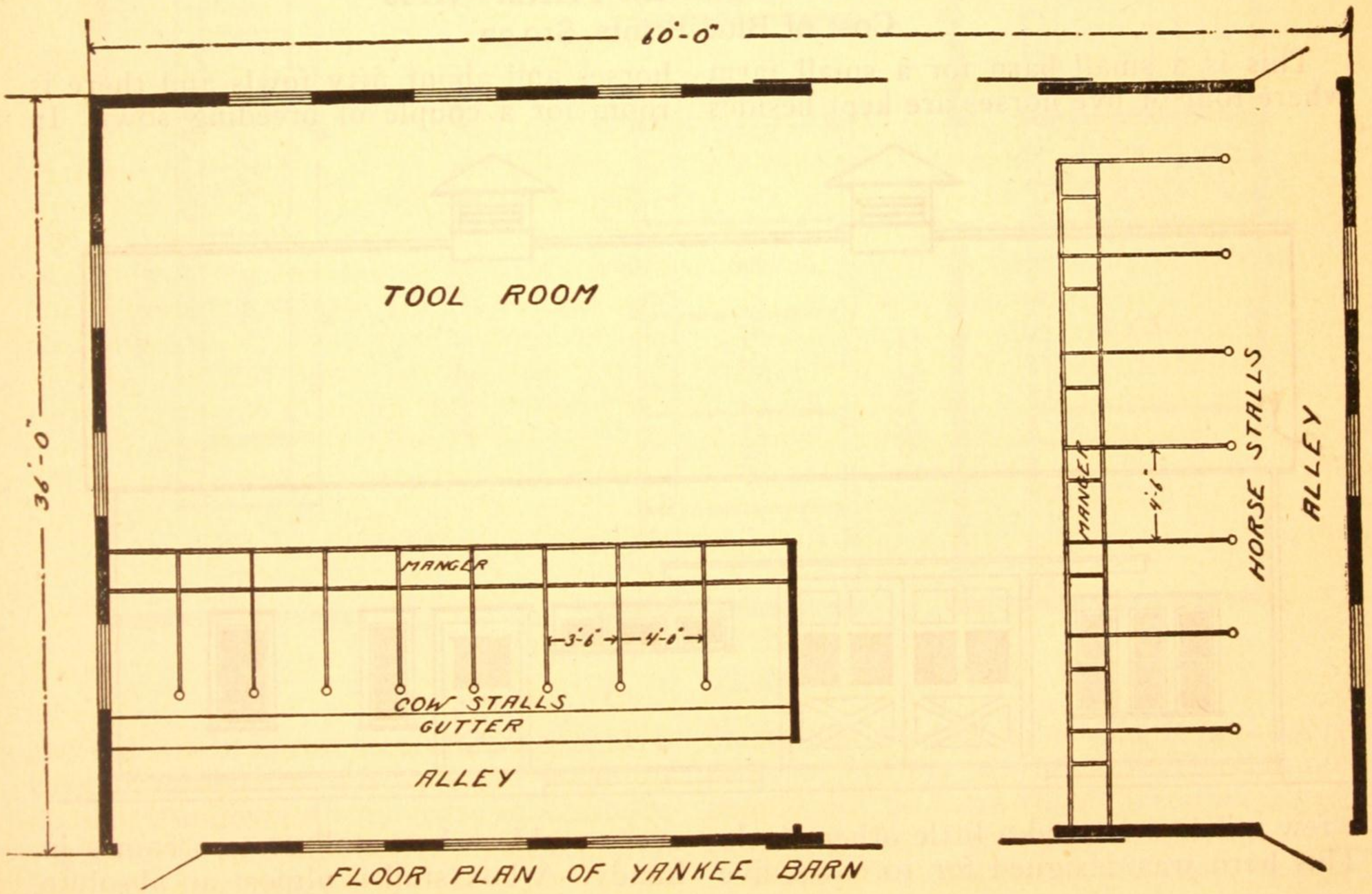
Cost of Blue Prints, $5.00

A style of barn that is often seen in New England is given in plan (A134). The horses and cows occupy part of the first floor, leaving a space in one corner that makes a convenient storage for farm tools. There is a driveway through this part of the barn and the door is large enough to get in with a hay-rack or a grain drill.

The upper part of the barn is used almost altogether for hay storage, the hay



SIDE ELEVATION



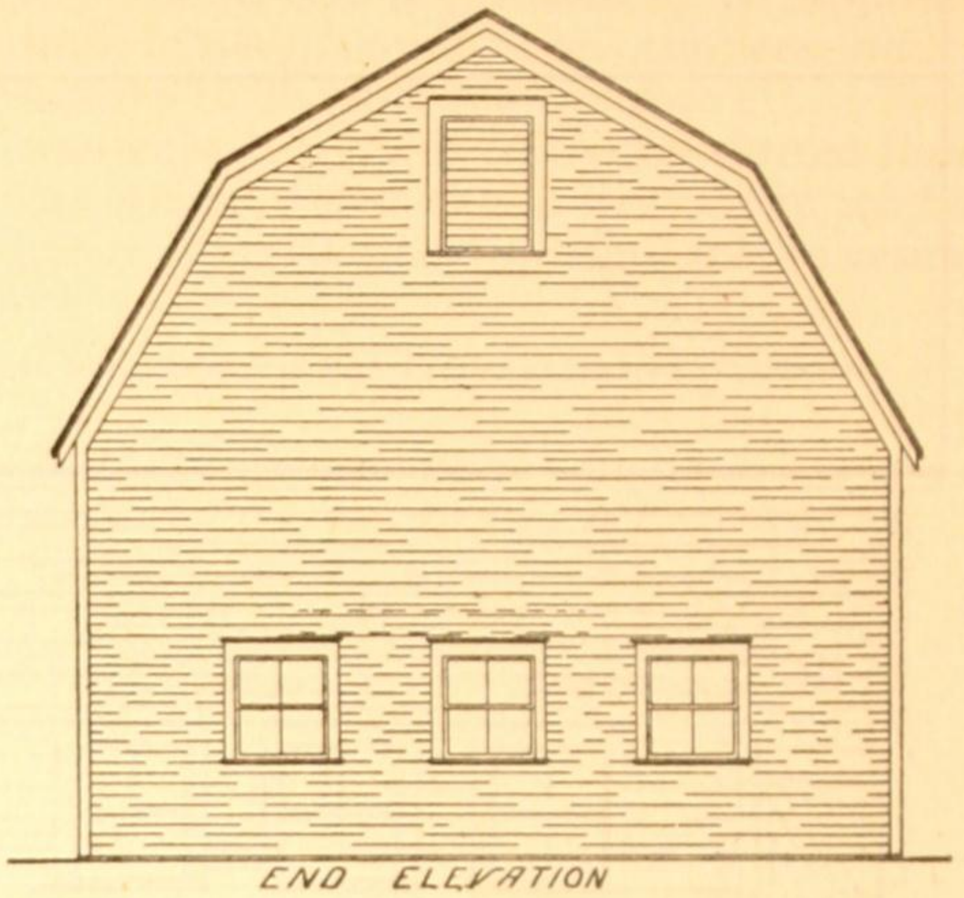
FLOOR PLAN OF YANKEE BARN

being lifted from the driveway by a horse-fork. It makes the stable much warmer to run the partitions in front of the cows and horses to the ceiling above. Unfortunately, too many farmers are careless about such things and their animals often suffer in large draughty stalls.

This barn is thirty-six feet wide by sixty feet long, not very large on the ground for a farm barn, but the shape of the roof helps out very much in storage.

It is floored over with the exception of an opening over the driveway and as this floor is only nine feet above the ground it leaves a very large loft.

There are a great many Yankee barns without so many windows, but the windows are a great advantage. It is much easier and more pleasant to do work in a light barn and the animals do better. It is difficult to account for so many dark barns, except that the fashion was established when the country was new and window lights were a great deal more expensive than they are now. Glass and sash



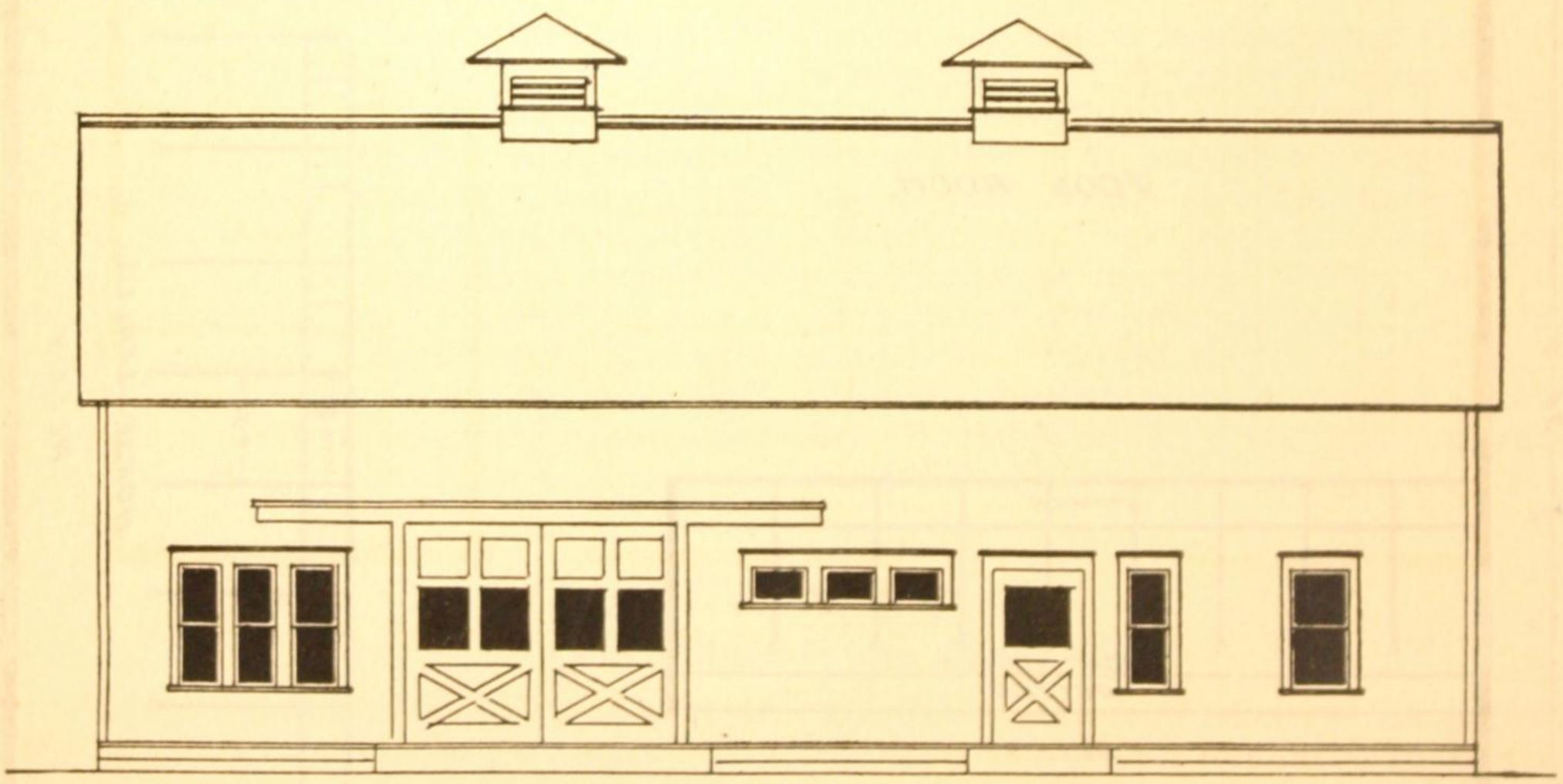
END ELEVATION

are just about as cheap as siding, there is no economy in building dark barns.

BARN FOR A SMALL FARM—A160

Cost of Blue Prints, $10.00

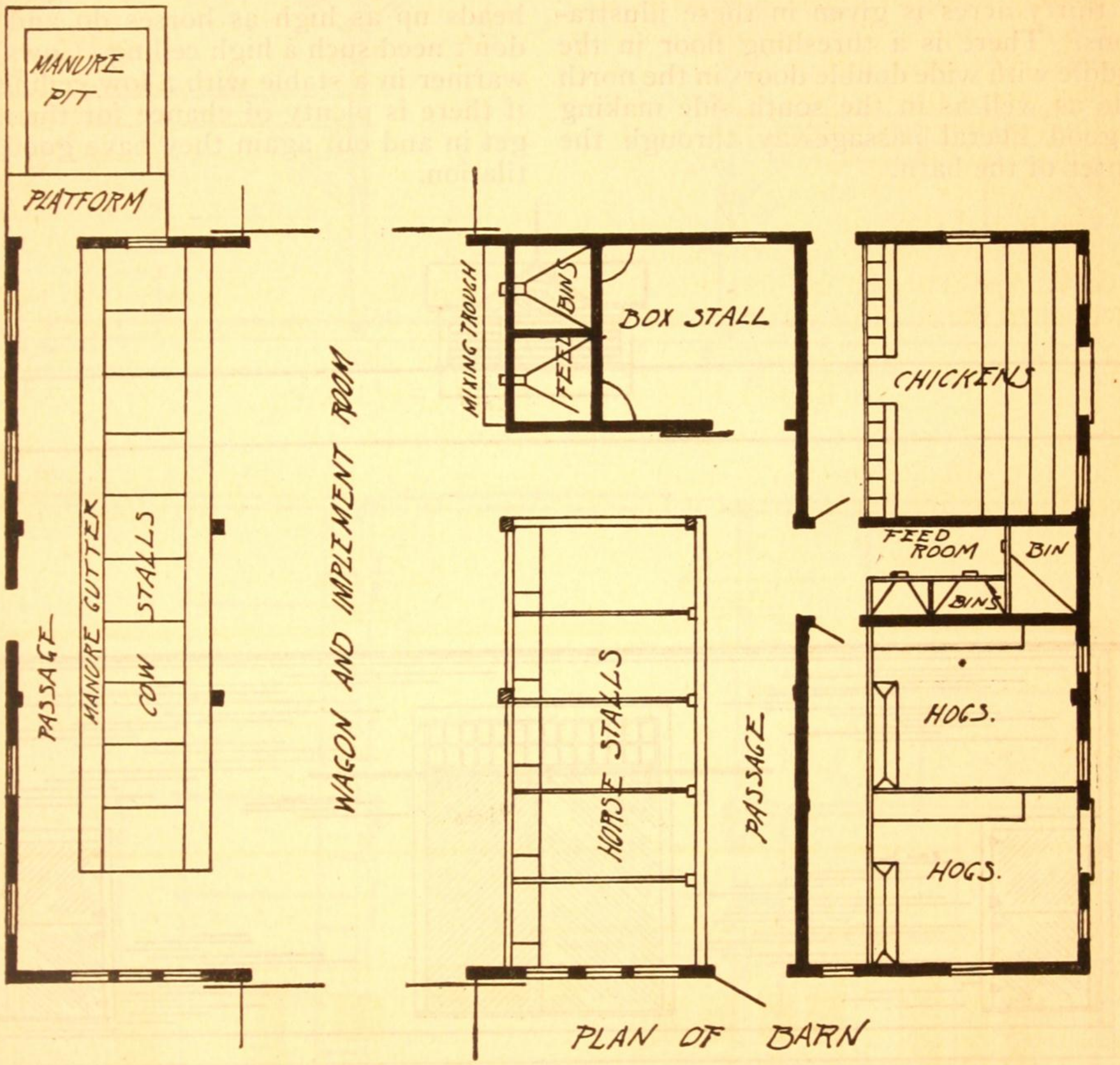
This is a small barn for a small farm where four or five horses are kept besides a few milch cows and a little other stock. This barn was designed for 10 cows, five horses and about fifty fowls and there is room for a couple of breeding sows. In every stable a box stall or two comes in handy. A box stall is almost an absolute



necessity sometime during the year either for sick animals or because some special attention is required.

The entire upper part is floored and there is an opening over the storage and implement room to pitch up hay, straw and other forage. This same opening answers for passing feed down to the mangers from the feed lofts.

There are windows all around this barn for light and ventilation; a provision that is too often left out when farm barn plans



PLAN OF BARN

are made. It is not necessary to shut a barn all up dark, and it is not advisable to do so. Windows do not cost much more than siding and the sun and light let in is a great advantage to stock.

The floor of this stable should be of concrete with the upper layer an inch thick composed of one part Portland cement and two parts clear soft sand but in making a floor like this is should be remembered that hard smooth cement is slippery and dangerous. The passage way may be marked off in diamonds with a regular tool which presses into the soft cement about one-half inch deep, but if the work is done on the farm and the usual mason's implements are not at hand, a smooth rake handle may be used by imbedding it in the soft cement half its thickness. The handle should not be more than three-fourths or seven-eighths of an inch in diameter.

Unless the concrete foundation in this

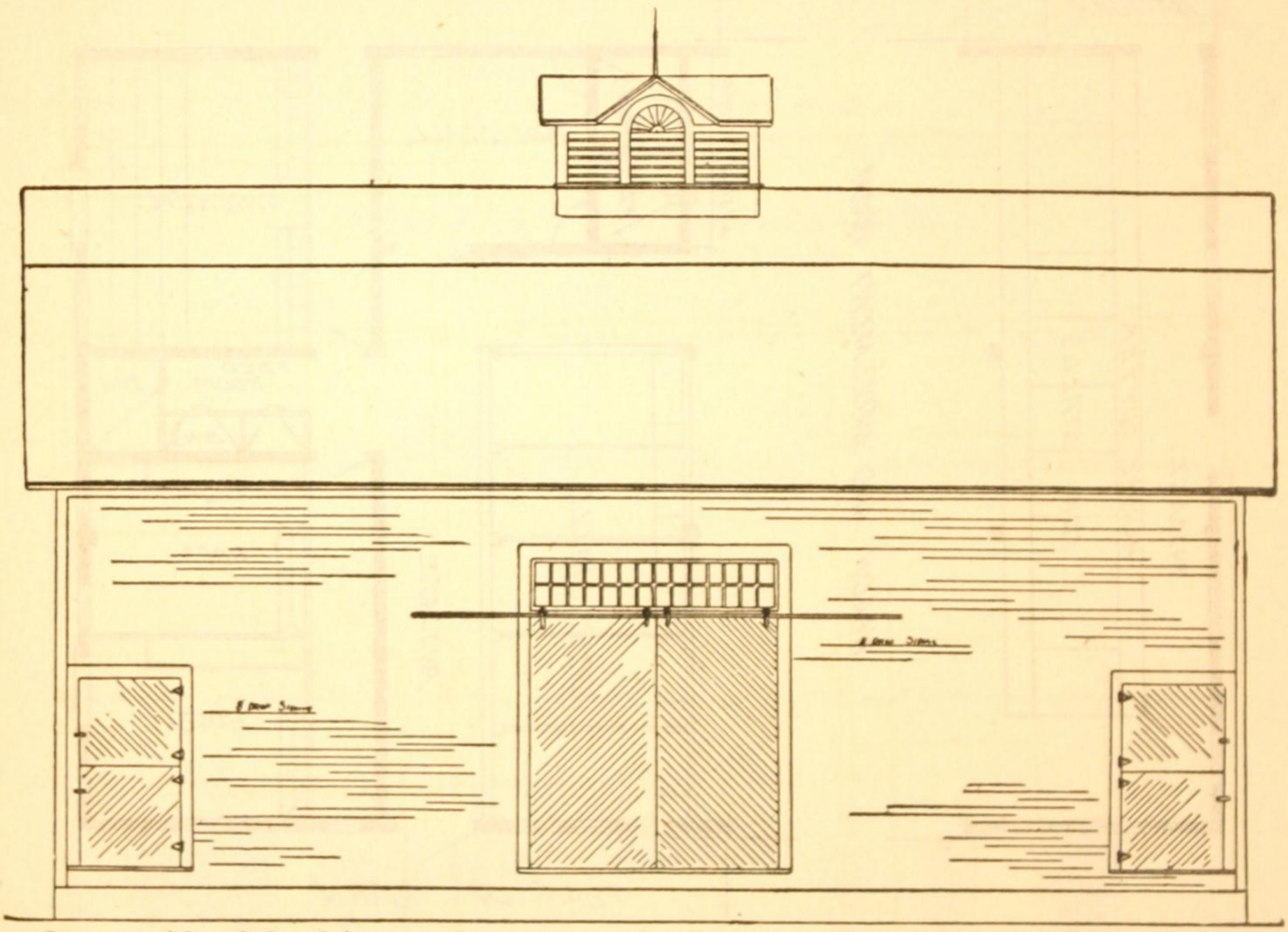
driveway is of superior quality the cement top layer should be more than an inch in thickness, perhaps two inches in the center, tapering to an inch at the sides next to the stalls.

In laying a concrete floor in any building it is necessary to run a wall around the outside and this wall should extend below frost. If the ground is inclined to dampness, it is better to run a three inch or four inch drain tile all around the wall along the bottom and the outlet of this tile should be carried away from the building eight or ten feet and terminate in a drain.

SMALL FARM BARN—A169

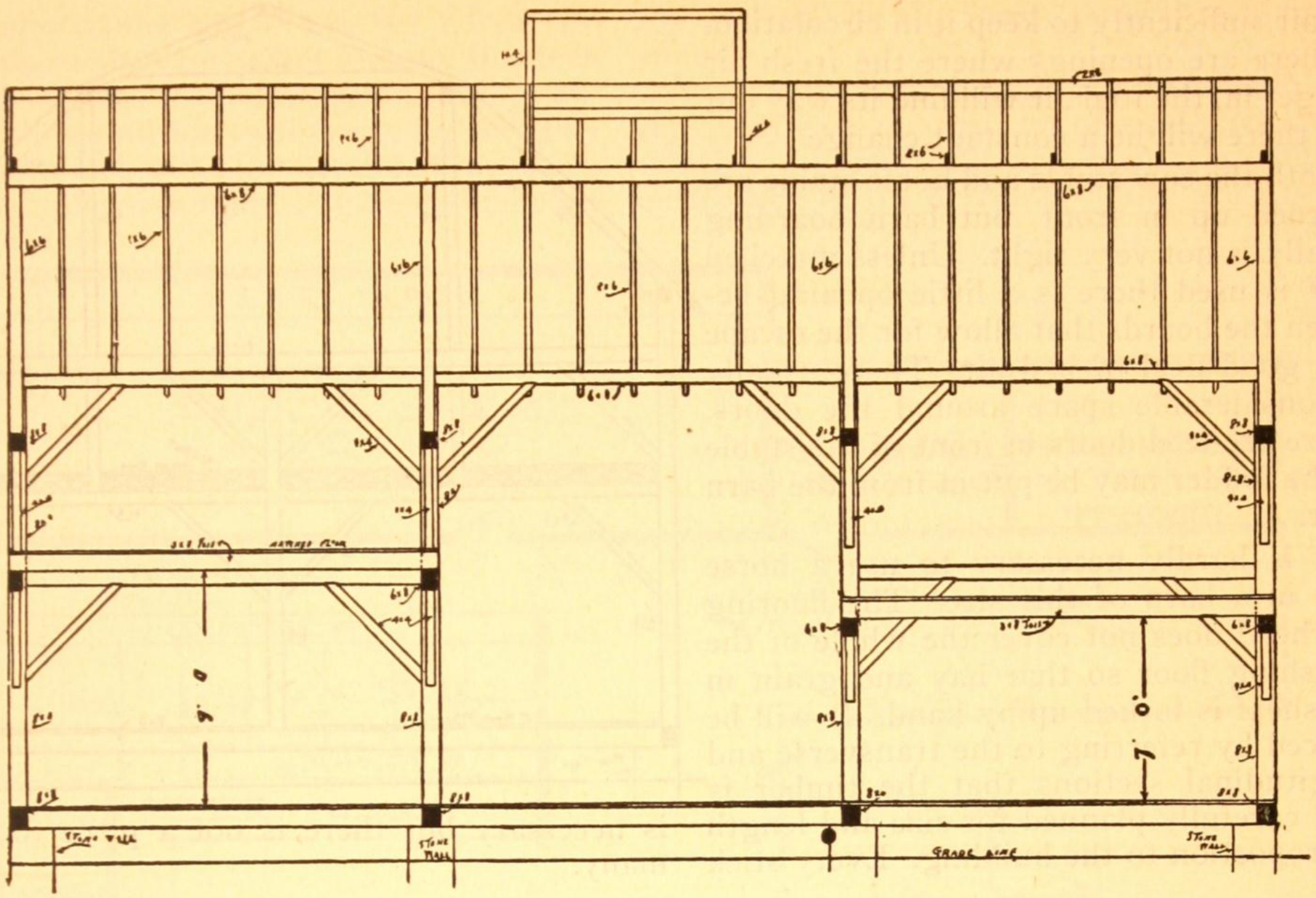
Cost of Blue Prints, $10.00

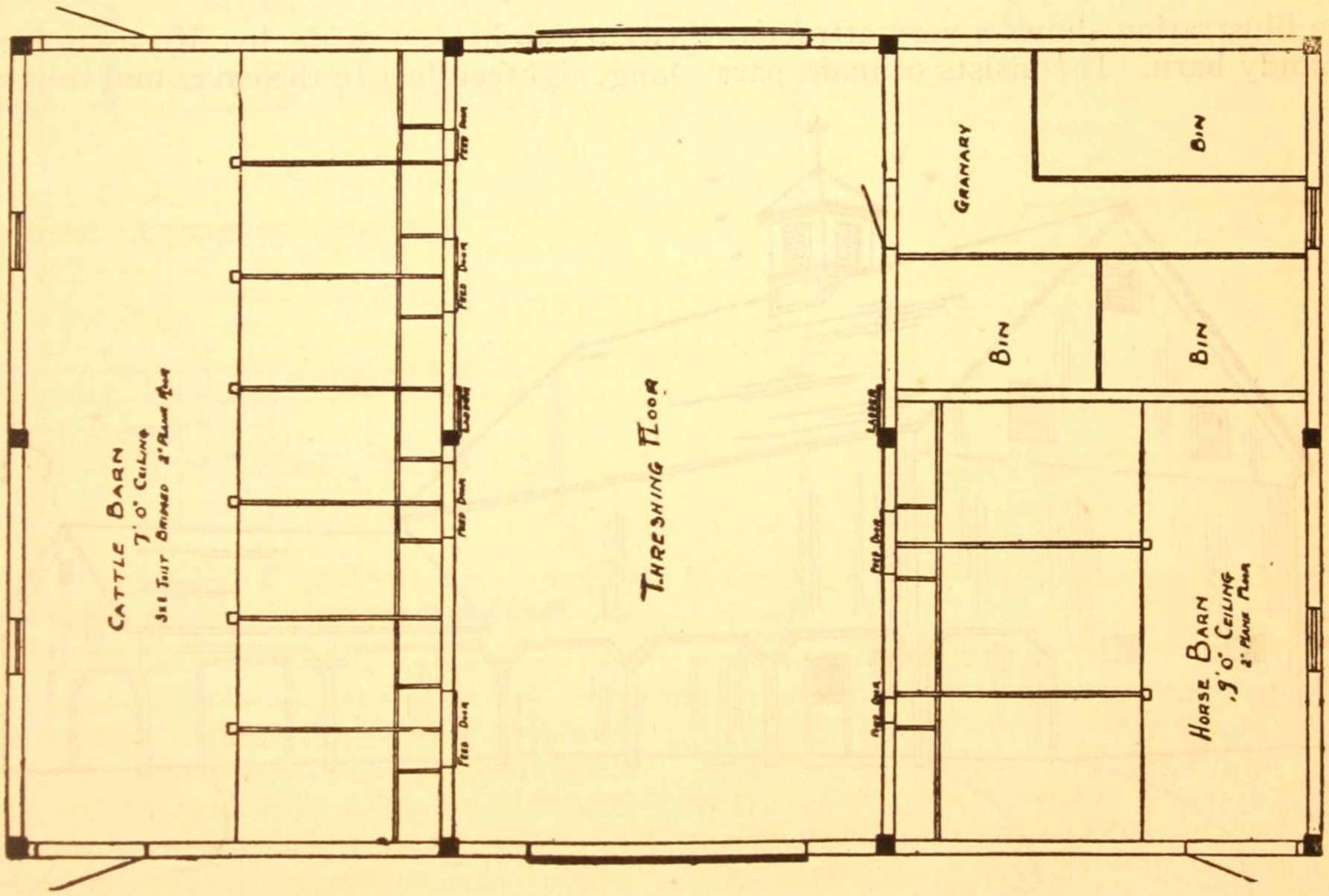
A neat little barn that is well proportioned and suitable for a farm of twenty or thirty acres is given in these illustrations. There is a threshing floor in the middle with wide double doors in the north side as well as in the south side making a good liberal passageway through the center of the barn.



On one side of the driveway is a granary and stabling for three horses with a nine foot ceiling. A third of the barn on the other side of the driveway is made into a cow stable making seven good roomy stalls. The cow stable side has a ceiling seven feet high. Cows don't get their heads up as high as horses do and they don't need such a high ceiling. Cows keep warmer in a stable with a low ceiling and if there is plenty of chance for the air to get in and out again they have good ventilation.

It seems difficult for some live stock men to understand this phenomenon. The reason is the air circulates more freely when it is warm. The body heat of seven cows in this stable with a low ceiling will warm

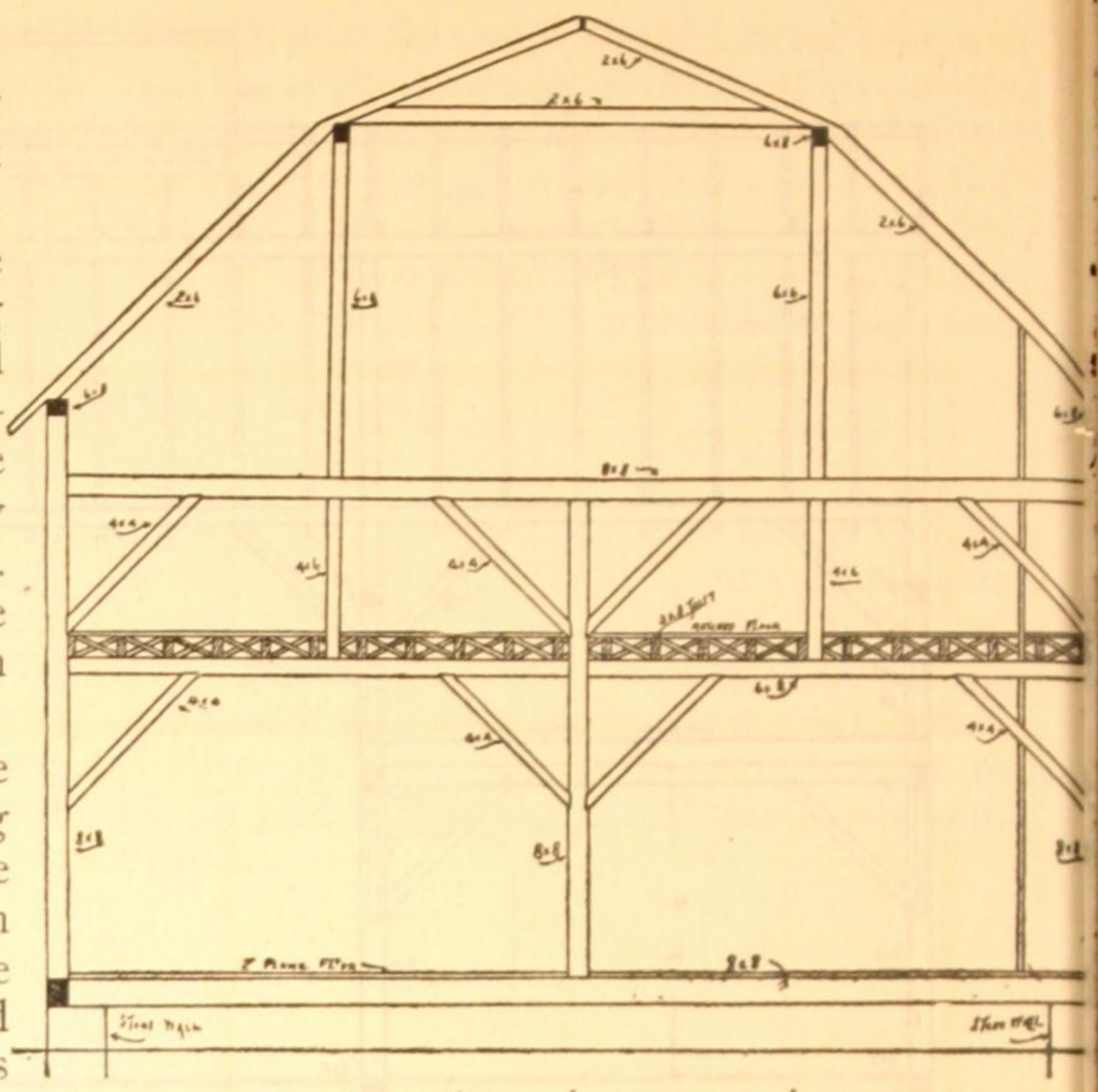

9' 0"
7' 0"
STONE WALL
STONE WALL
GRADE LINE
STONE WALL


CATTLE BARN
7' 0" CEILING
3x8 JOIST BRIDGED 2" PLANK FLOOR
FEED DOOR
FEED DOOR
FEED DOOR
THRESHING FLOOR
GRANARY
BIN
BIN
BIN
HORSE BARN
9' 0" CEILING
2" PLANK FLOOR

the air sufficiently to keep it in circulation. If there are openings where the fresh air can get in, the foul air will find its way out and there will be a constant change.

Both the cow stable and horse stable are boarded up in front, but barn boarding usually is not very tight. Unless matched stuff is used there is a little opening between the boards that allow for the escape of a good deal of bad air. There usually is considerable space around the doors. There are feed doors in front of the stable so the fodder may be put in from the barn floor.

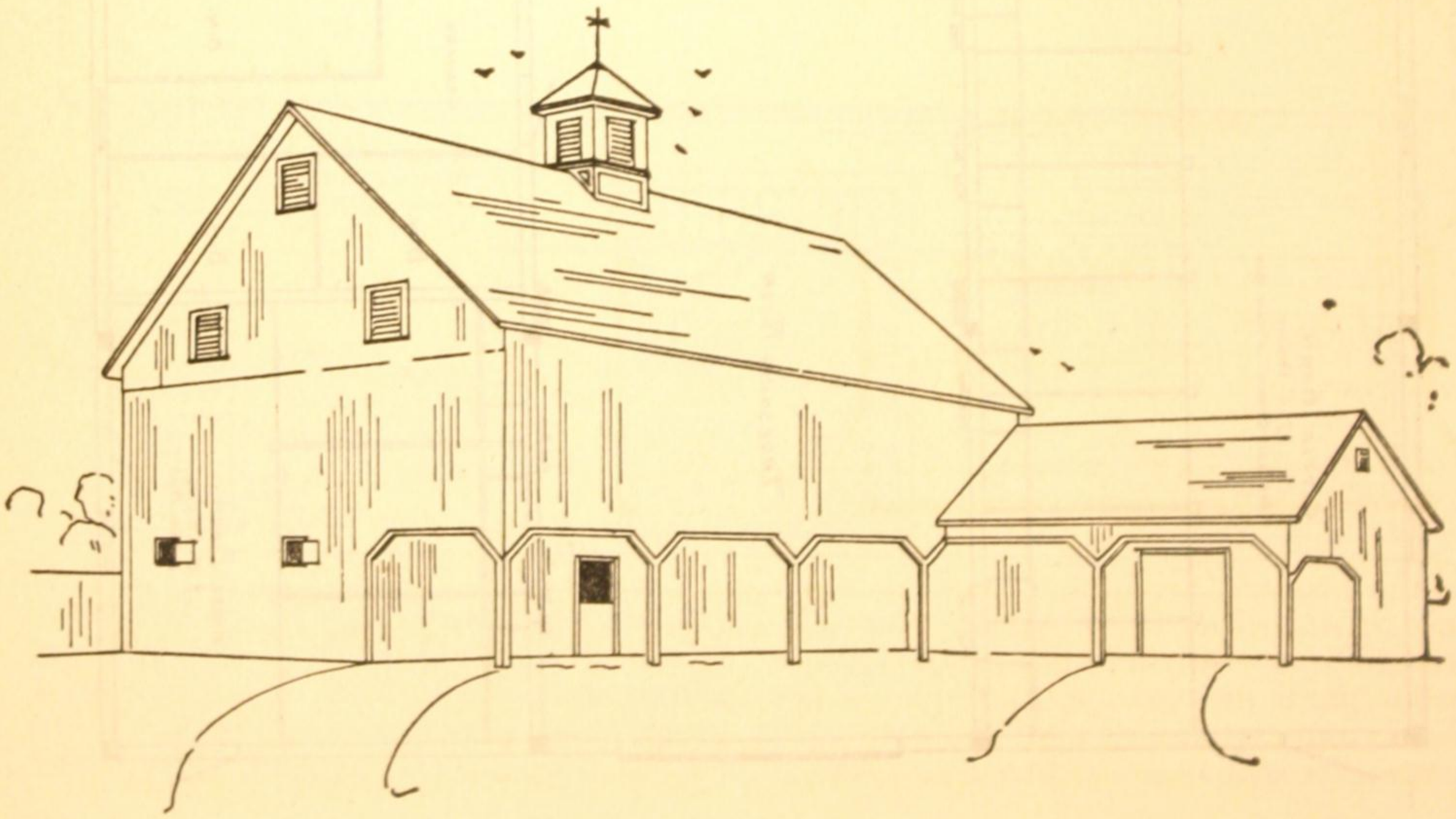
It is hardly necessary to use a horse fork in a barn of this size. The flooring overhead does not cover the whole of the threshing floor so that hay and grain in the sheaf is forked up by hand. It will be noticed by referring to the transverse and longitudinal sections that the timber is very carefully planned for size and length in proportion to the building. Every stick



is necessary but there is not a piece too many.

KESLER BARN—A189

The illustration shows a very attractive and handy barn. It consists of main part twenty-eight feet wide by fifty-two feet long, eighteen feet to the eaves and thirty-

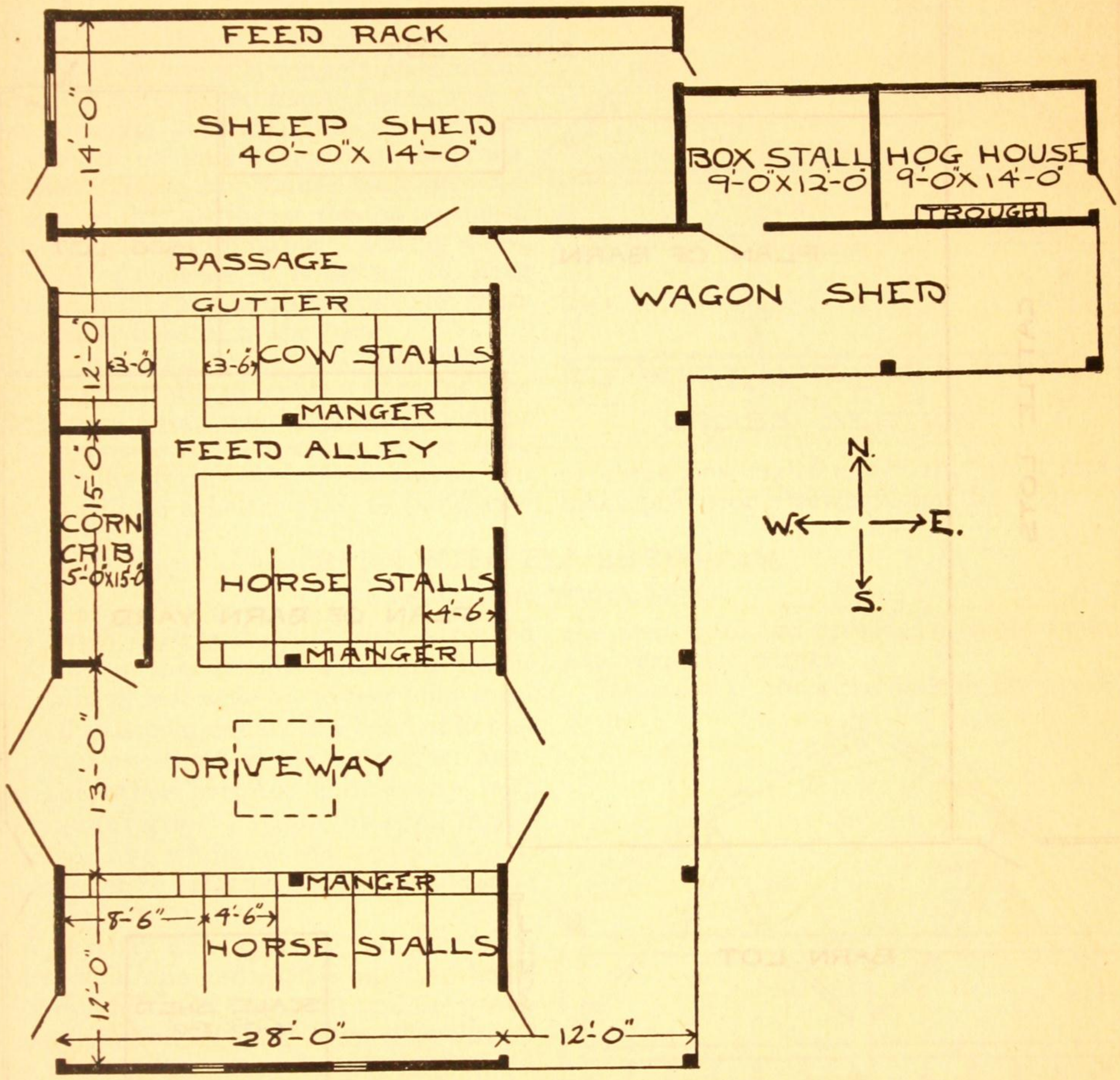


five feet to the comb. On the north is a low sheep shed forty feet long by fourteen feet wide, and extending east of this is another low addition twenty-six feet long by eighteen feet wide, the north half of which is used for horse stalls, hog house and corn crib, the corn crib being built over the hog compartment. The south half of this extension is an open shed. Also an open shed extends along the east side of the main building and is equipped with mangers for six horses to be used when extra teams are at work on the farm, as at threshing time.

A driveway runs through the main building from east to west, on one side below which are horse stalls and corn crib. On either side of the driveway above are hay mows which hold about fifty tons of hay which is taken up from the center inside.

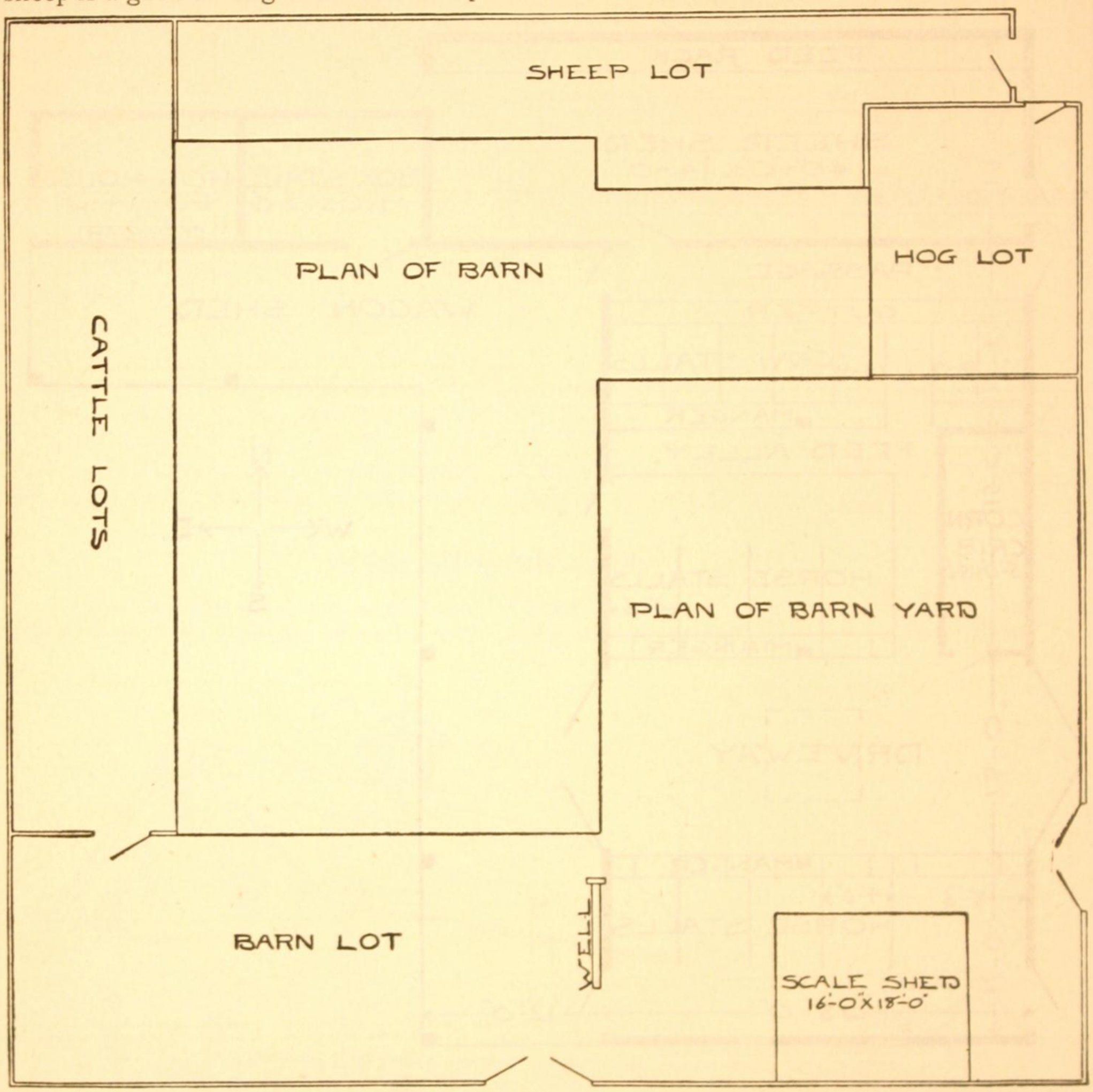
North of the middle horse stalls and crib are the cow stalls, a three foot feedway running between them.

The plan as given includes a leanto on



the north end which extends all the way across the end of the barn and is attached to the open shed which contains a box stall and a hog house and joins the northeast corner of the main barn. The shed for sheep is a good arrangement and it is placed right. Sheep have no business in the common barnyard; they are likely to get hurt and they are a nuisance at feeding time. Sheep carry their own blanket with them and they require no warmth from the building except at yeaning time. A shed like this with a roof sloping to the north makes a very good shelter.

In this case the feed rack is built on the north side of the shed and it may be filled by putting down hay from the mow overhead. The mow is not very large, but as the shed is only fourteen feet wide feed is easily shoved through from the main barn. This method of feeding is much better than putting hay down through an open chute amongst the sheep. They crowd under the falling feed and they get

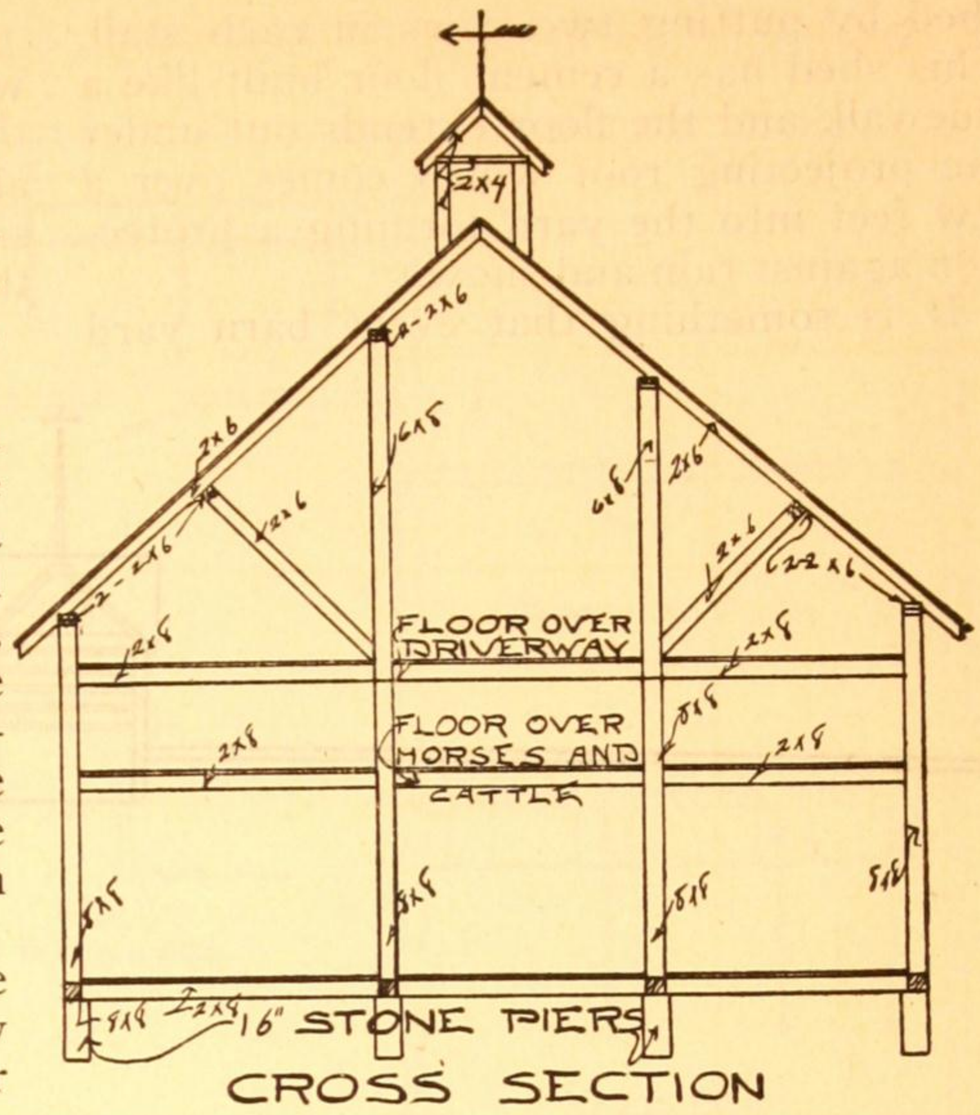


their wool so filled with chaff and seeds that it affects the sale of it, besides the dirt and dust is no benefit to the sheep.

Keep sheep dry and have a lot for them to run out in during the day time. Drainage must be looked to or water will accumulate when the snow melts towards spring.

As a usual thing it is not a good plan to have a hog house in connection with the barn but on a great many farms only a few hogs are kept and they are allowed to run out on pasture most of the time. In such cases a hog house built into the far end of this northeast shed is permissible, though not advisable. During these days of specialties it is better to have small movable hog houses than to let them come anywhere near the barn.

The box stall under this shed will be found very useful to stable a horse or cow when they need veterinary attention, or to hold a mare and colt, or for two or three spring colts during their first winter. In fact it will be a better plan to build two or three box stalls under this shed and make provision elsewhere for the hogs.



CROSS SECTION

BARN WITH ELL SHED—A163

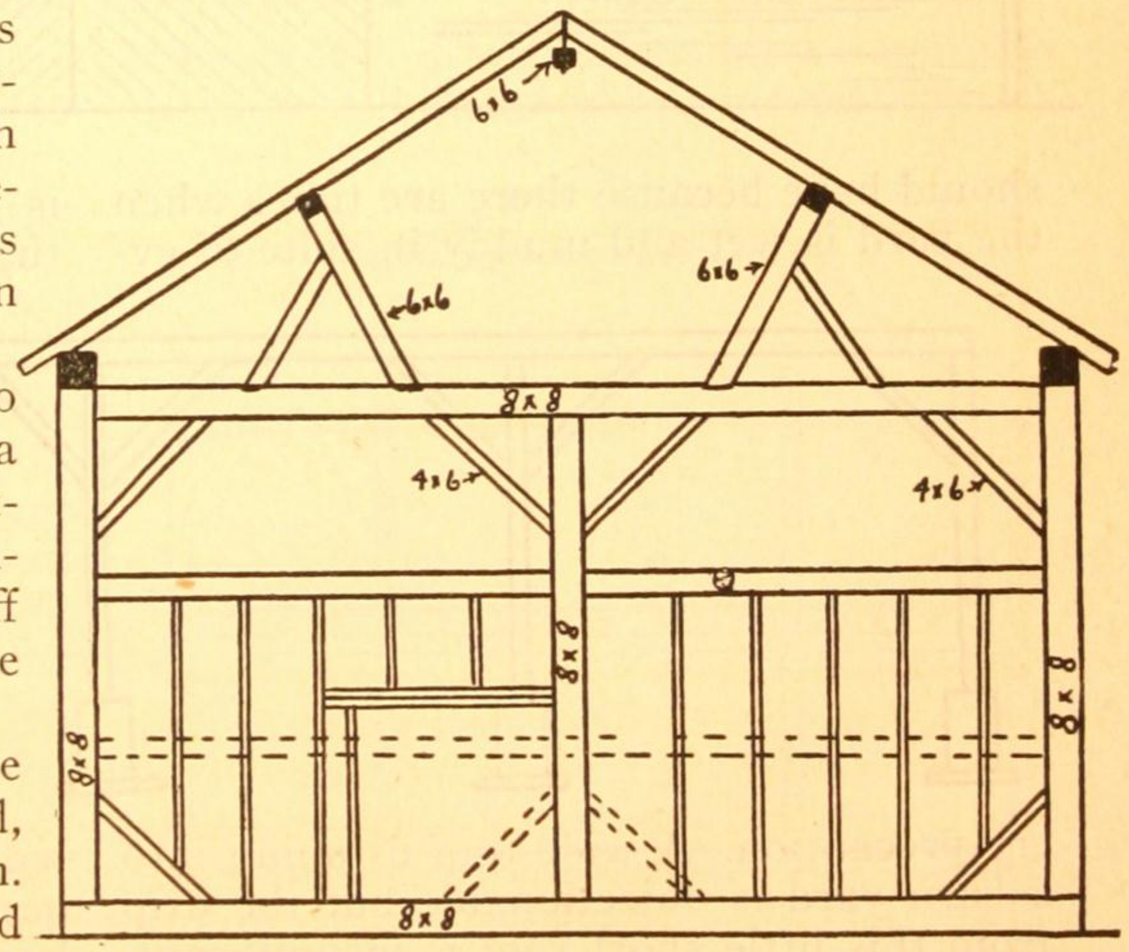
Cost of Blue Prints, $10.00

A small barn with an ell shed attached is shown in this design. The barn proper which is 28 feet wide by 56 feet long is intended to accommodate five head of horses in about one-third of the floor space leaving the other part for a driveway with storage for grain, hay and farming implements. The whole of the second floor is given over to storage for hay or grain in the sheaf.

A hay bay extends from the ground to the roof in one end of the building but a floor extends over the stable and the greater part of the threshing floor. The threshing floor section may be partitioned off from the horse stable to make the stable warmer.

The shed forms an L running across the north and west sides of the barn yard, leaving the south side open to the sun. This arrangement breaks the north and the west wind and provides a comfortable barn yard for winter.

Stalls for 12 cows are built in the north

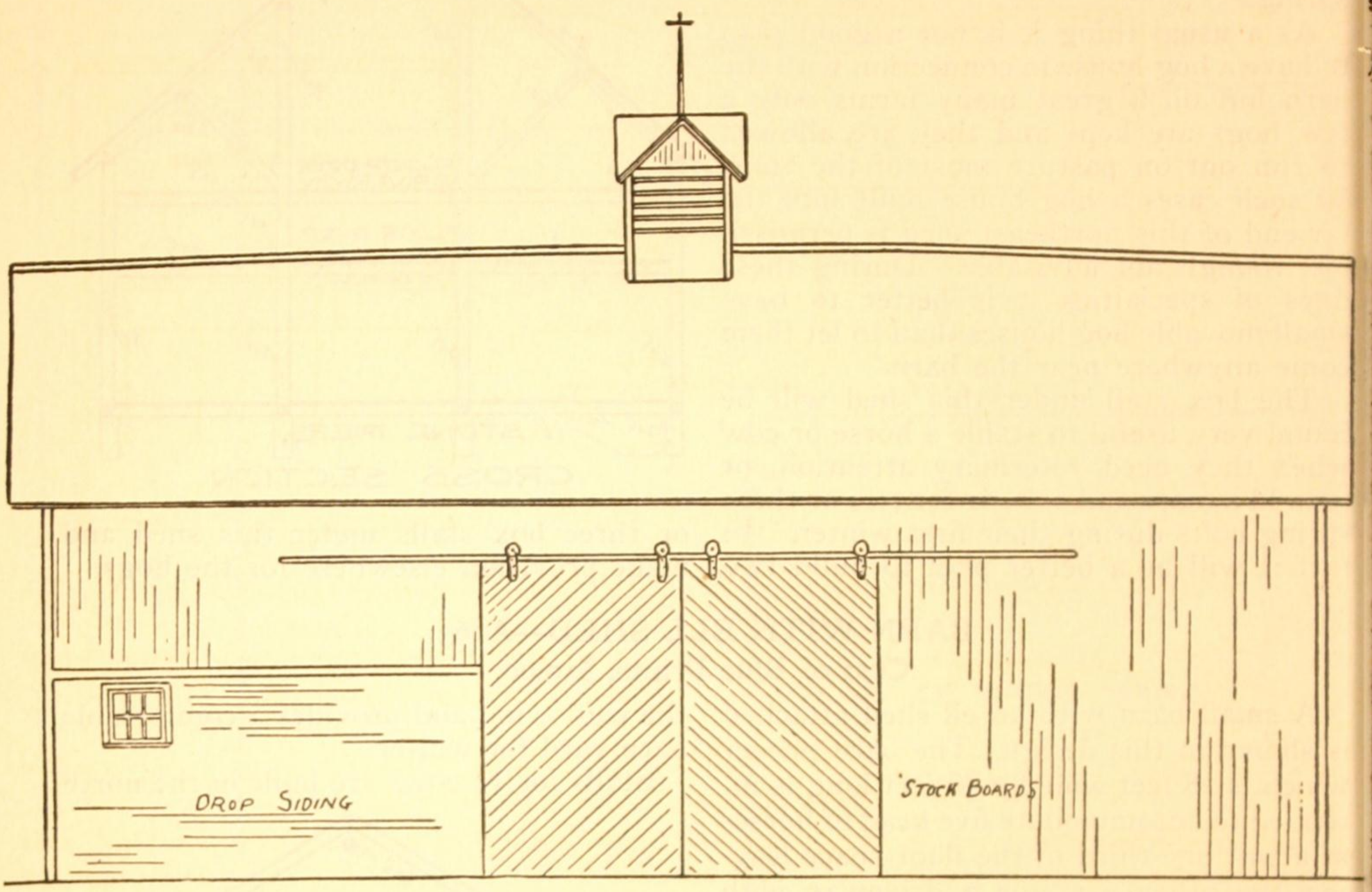


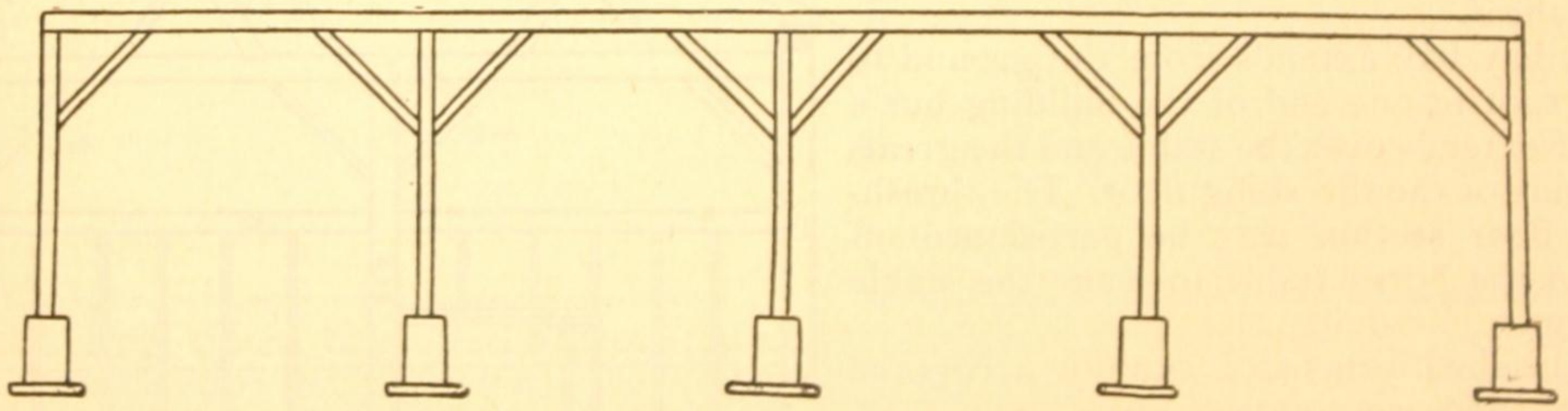
shed by putting two cows in each stall. This shed has a cement floor built like a sidewalk and the floor extends out under the projecting roof which comes over a few feet into the yard forming a protection against rain and snow.

It is something that every barn yard should have because there are times when the yard is wet and muddy in spite of every precaution. A wide roof dripping into a barn yard is objectionable but the drip from this little short roof is insignificant.

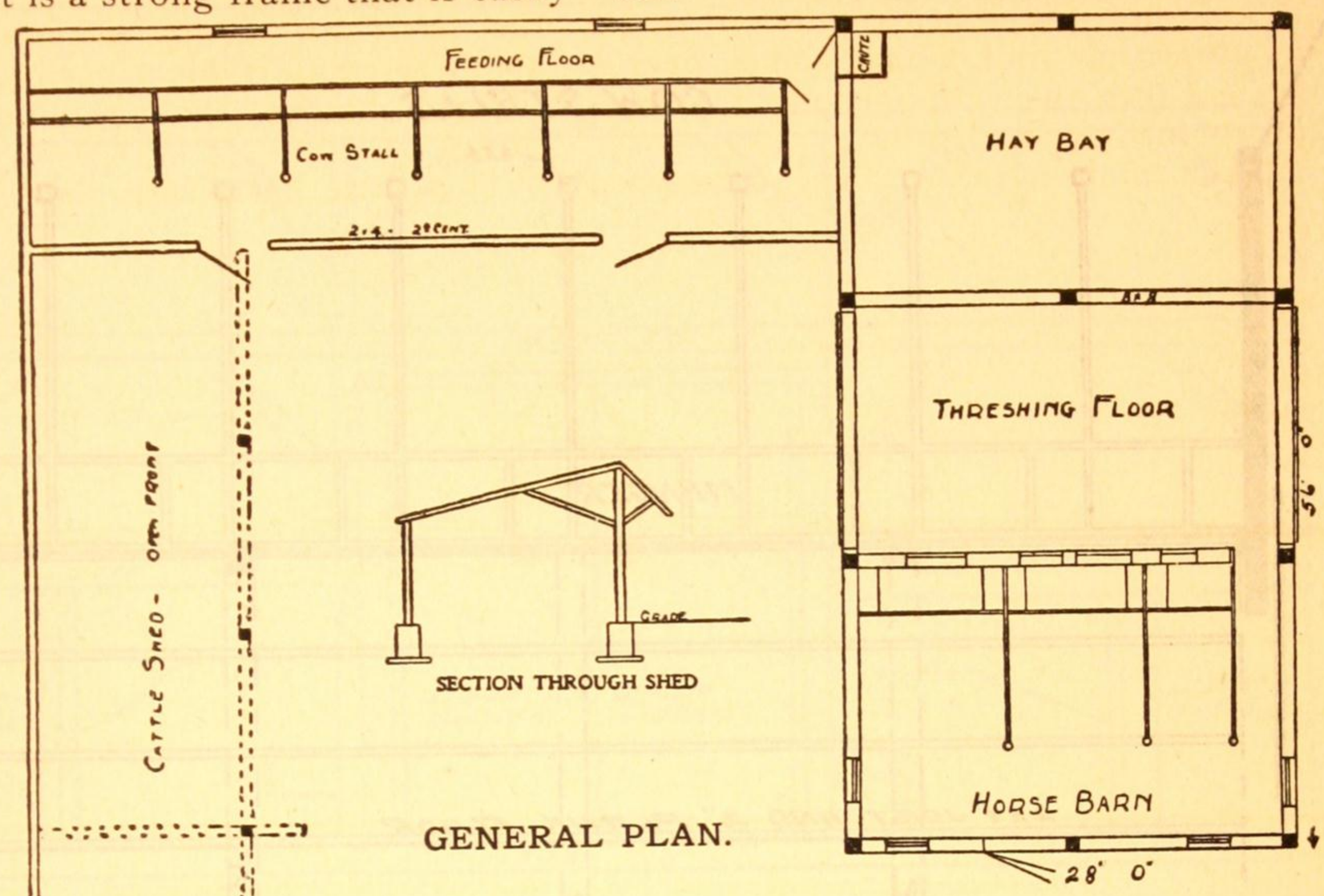
The other part of the shed is open to the weather on the east side looking towards the barn, an arrangement that makes about as comfortable a barn yard as possible to obtain without roofing the whole thing.

This little barn with shed attachment is not expensive but is more convenient than some larger structures. The cost is within the reach of any farmer although he may not have more than 20 acres of land. A transverse section is shown giv-





ing a good idea of how the building is framed. It is a strong frame that is easily put together and there is no waste of timber.



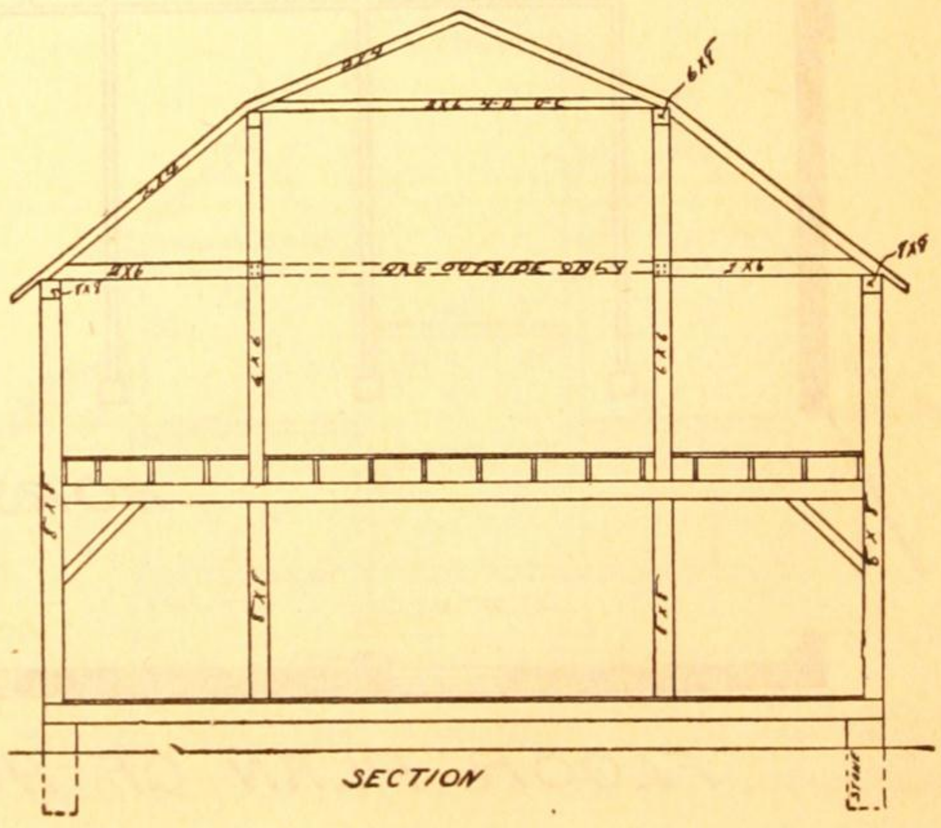
GENERAL PLAN.

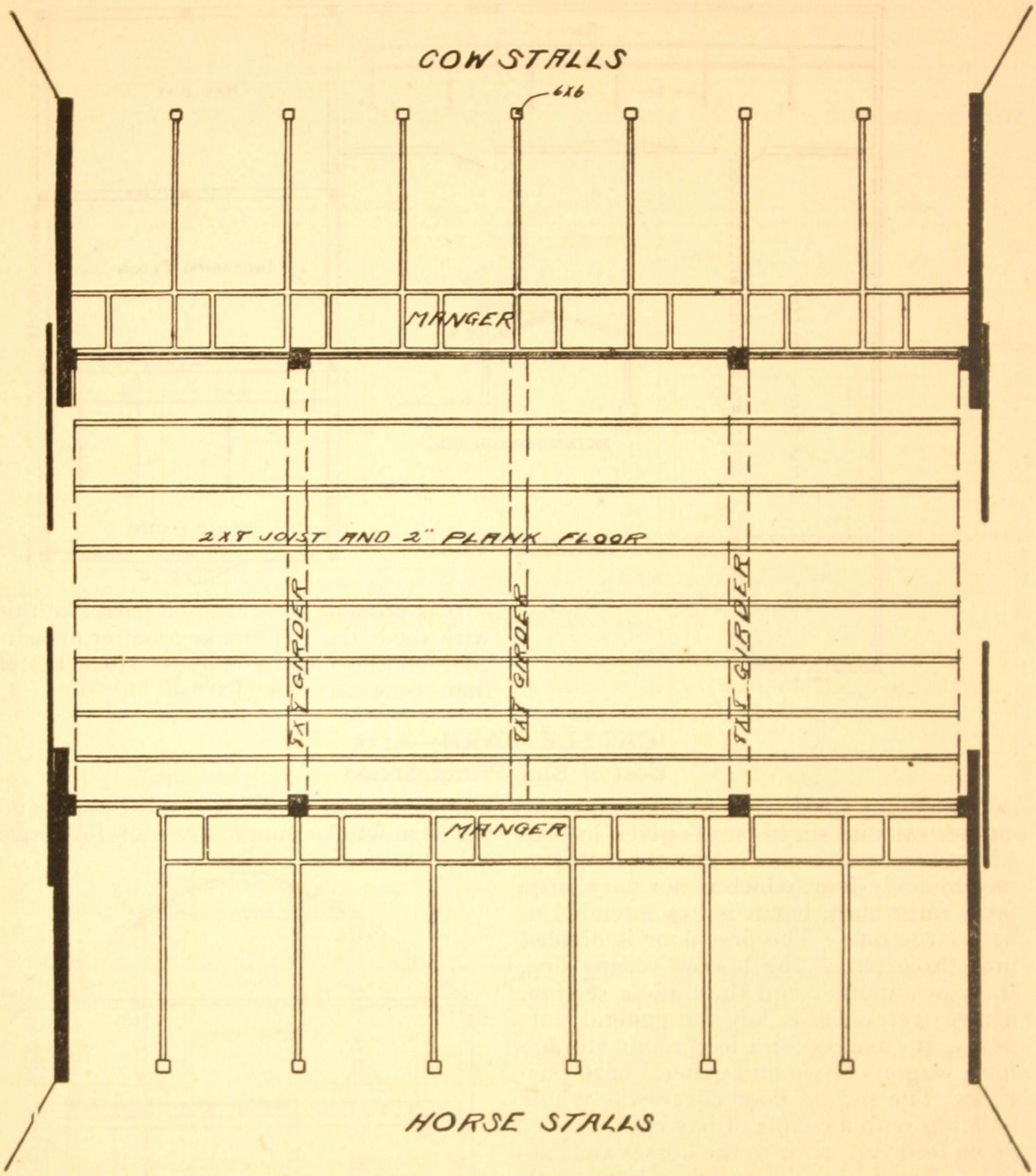
It is possible to arrange a barn like this with sheds that will make a better appearance on the farm and house stock better than some expensive barns.

CATTLE BARN—A115

Cost of Blue Prints, $10.00

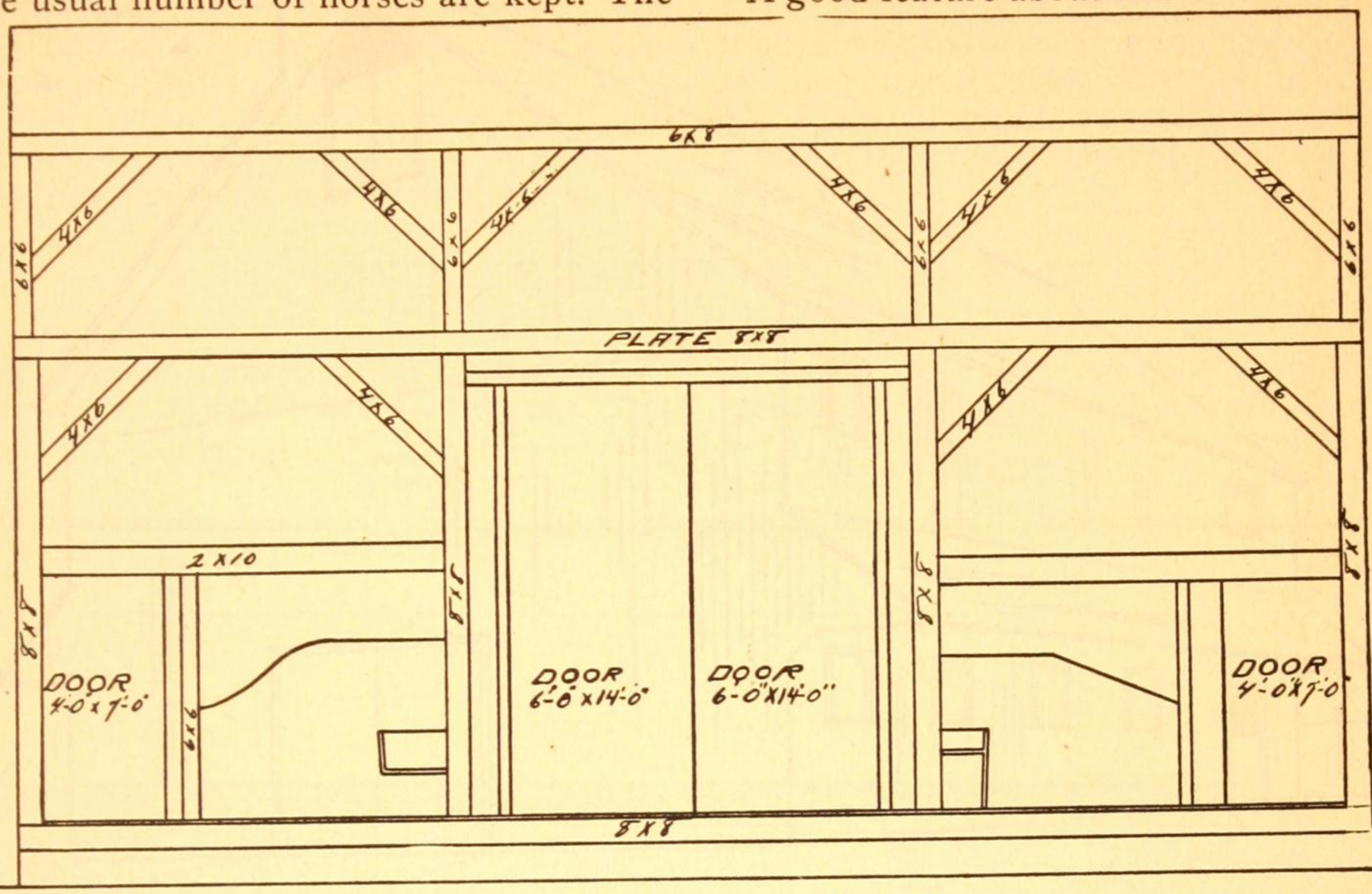
A medium sized barn to accommodate eight cows and six horses is given in plan (A115). The size on the ground is thirty-two by forty-four, which is not very large for a farm barn, but it is not intended to be a large one. The first floor is divided into three parts; the horses occupy one, the cows another and the middle section, fifteen feet wide, is left for general purposes. It answers for a feed room, storage for a wagon or two and general barn purposes. The second floor covers the whole building with a couple of hay chutes to let down feed and straw to the horses and cattle. It hardly pays to work a horse fork in a barn of this size. The stuff may be put in by hand from the outside through doors that open down to the floor. There is no waste space in this plan, every foot is made use of to the best advantage, and the barn will be found very useful on farms





FLOOR PLAN OF HORSE AND CATTLE BARN

where a small number of cows and about the usual number of horses are kept. The plans show the construction in detail. It may be boarded up and down or covered with siding. May be made any length. A good feature about this barn is that it can be added to without interfering with the general arrangement in any way.

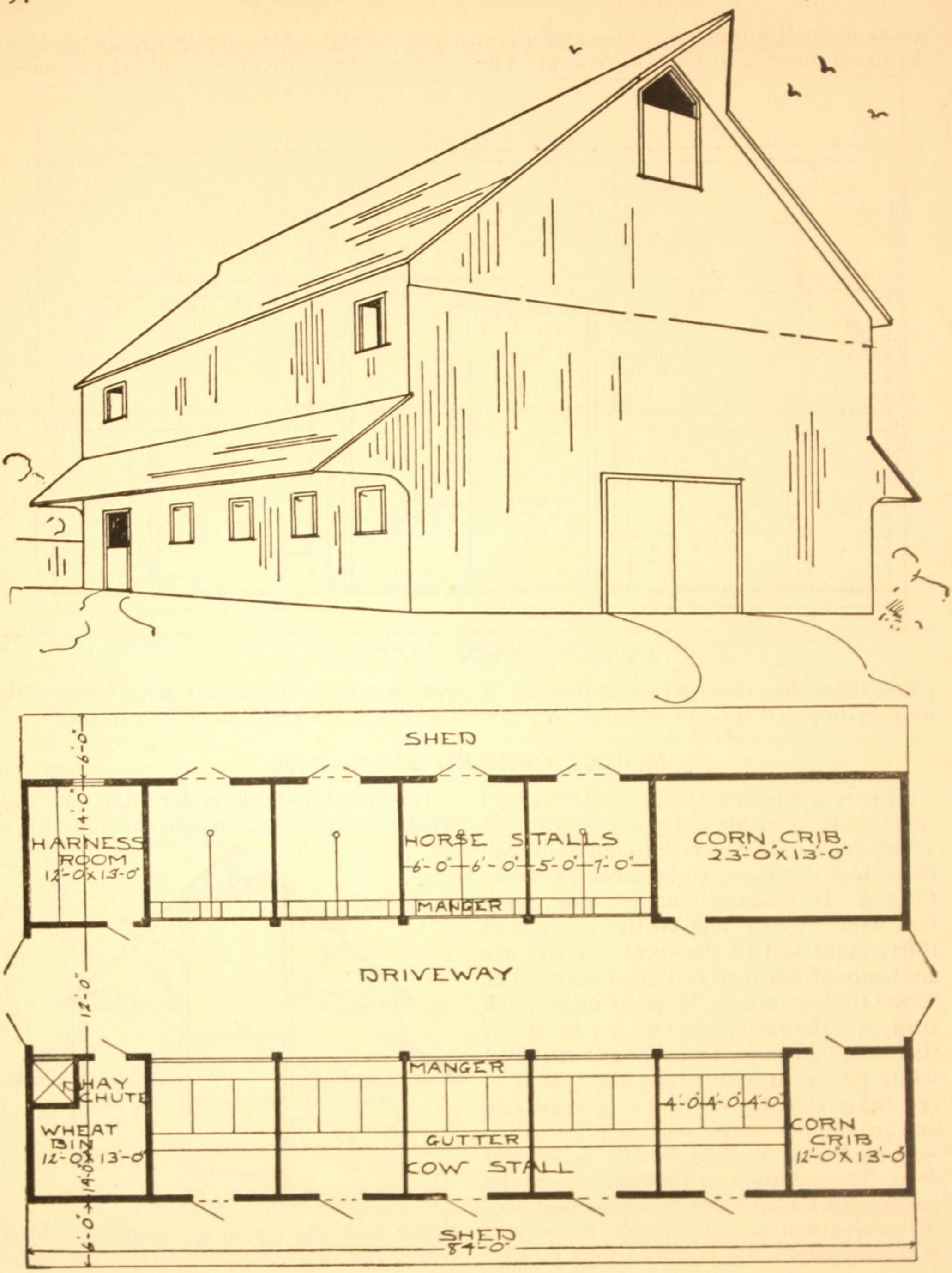


LONGITUDINAL SECTION

MOUNT CARMEL BARN—A186

This is a medium large, attractive and serviceable barn on a 120-acre farm. It stands on a solid concrete foundation wall three feet deep and eight inches wide at the top. It is eighty-four feet long, forty feet wide, twenty feet to the eaves, and thirty-eight feet to the comb. There are six bents of fourteen feet span each. The frame timbers are six by eight inches, oak stuff, and the rafters two by five inches of the same material. The siding is matched white pine painted red, and the roof is of red cedar shingles. There is a vegetable and fruit cellar under north end of driveway twelve by twenty feet by seven feet deep. The hay mow of the barn covers the entire upper floor forty by eight-four feet by twelve feet to top of side posts, and will hold about one hundred tons of hay. It is fitted up with modern hay fork and track, and hay is taken into the mow from either end, the openings being provided with pairs of swinging doors. Corn-cribs

CROSS SECTION


SHED
6'-0"
14'-0"
HARNESS ROOM
12'-0"X13'-0"
HORSE STALLS
6'-0" 6'-0" 5'-0" 7'-0"
MANGER
CORN CRIB
23'-0"X13'-0"
DRIVEWAY
12'-0"
14'-0"
6'-0"
HAY CHUTE
WHEAT BIN
12'-0"X13'-0"
MANGER
GUTTER
COW STALL
4'-0" 4'-0" 4'-0"
CORN CRIB
12'-0"X13'-0"
SHED
84'-0"

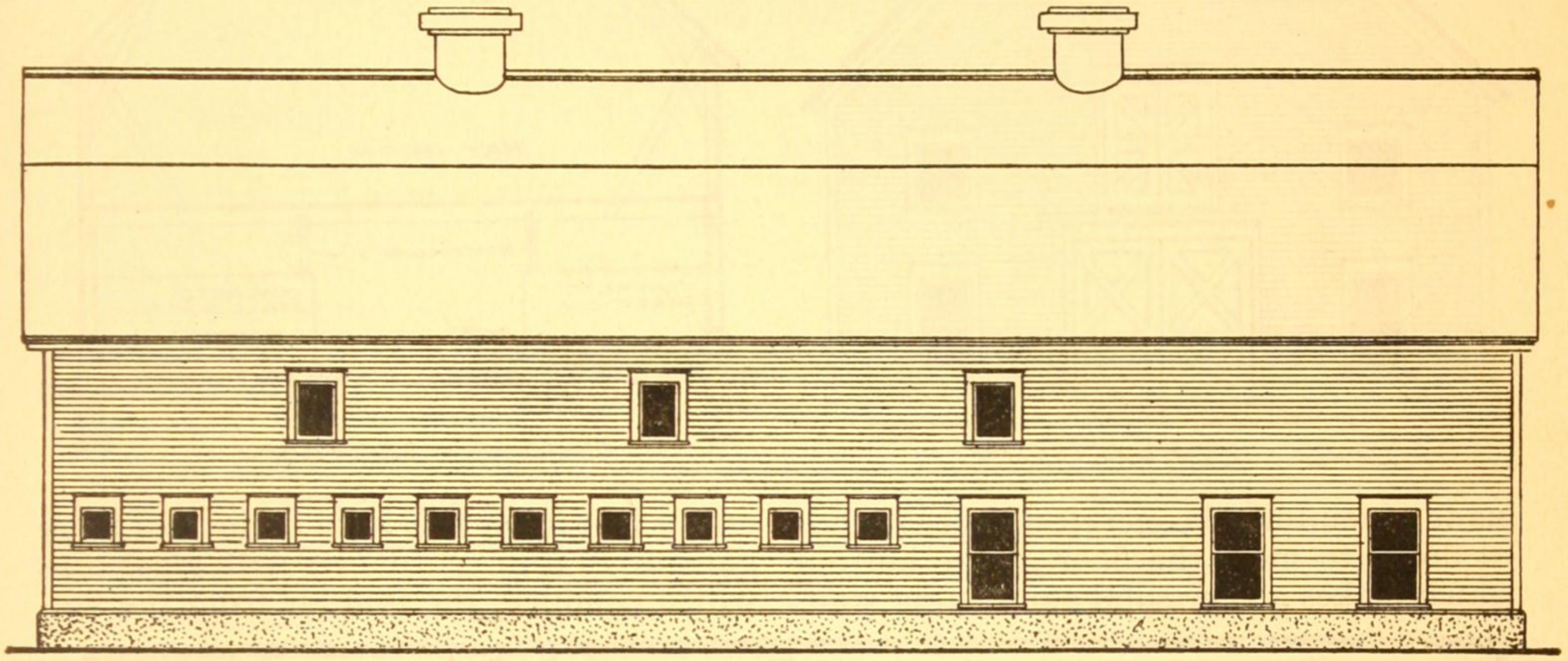
are built in two corners as shown and they are properly ventilated.

Running full length of both sides of the barn are self-supporting six foot sheds which allows full ventilation of the stables during summer through the open doors, but protection against both sun and rain. The barn will stable eight horses and twelve cows, the mangers all facing the long feed or driveway. The general appearance is imposing. The cost is $1,800, Mr. Risley doing his own hauling and furnishing the frame timbers from his own woods.

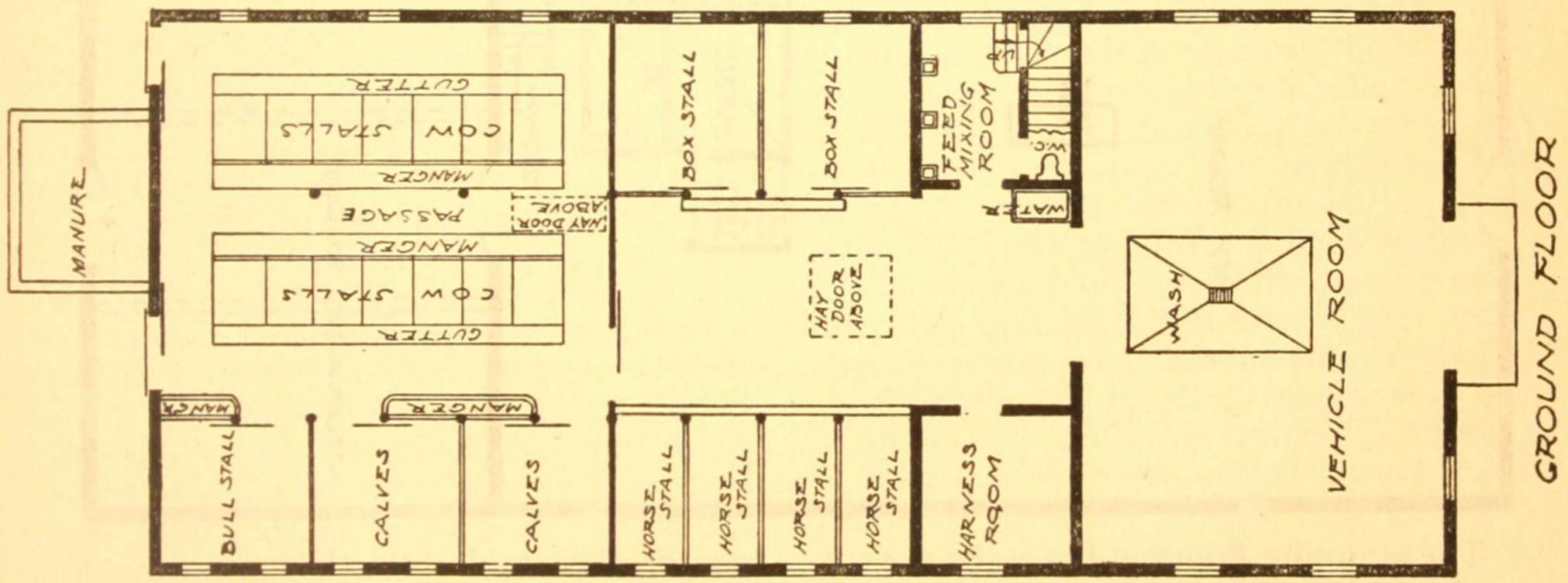
CONCRETE AND WOOD BARN—A213

Cost of Blue Prints, $15.00

Design of a practical farm barn suitable for a farm of eighty acres where the farmer wishes to keep a dozen cows and five or six work horses in the basement with storage overhead for hay and other roughage. The basement also contains a room for wagons and buggies with a wash floor depression in the center, an arrangement that makes a combination horse and cow barn with three box stalls for calves or

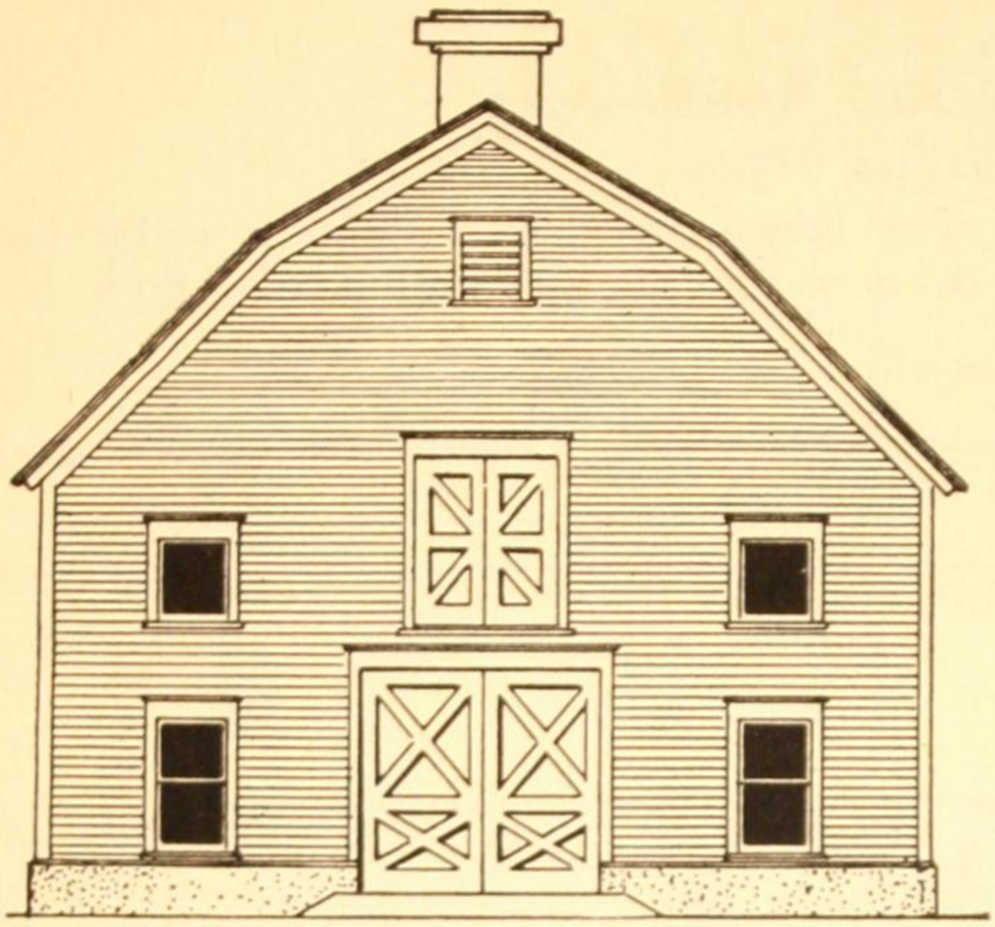


SIDE ELEVATION

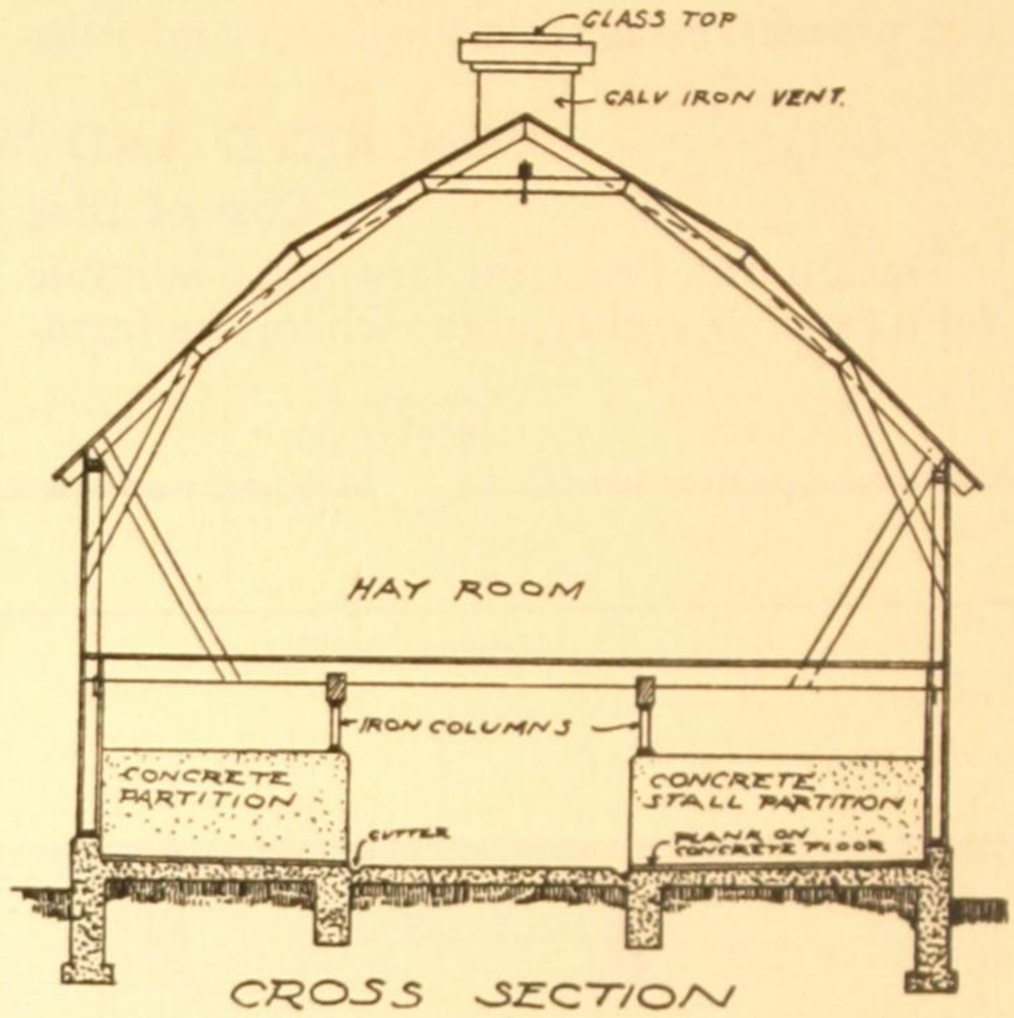


other stock. It is a convenient arrangement where a farmer has only the one main barn.

Among the novel features in this barn is a cement floor with cement partitions between horse stalls. These partitions are



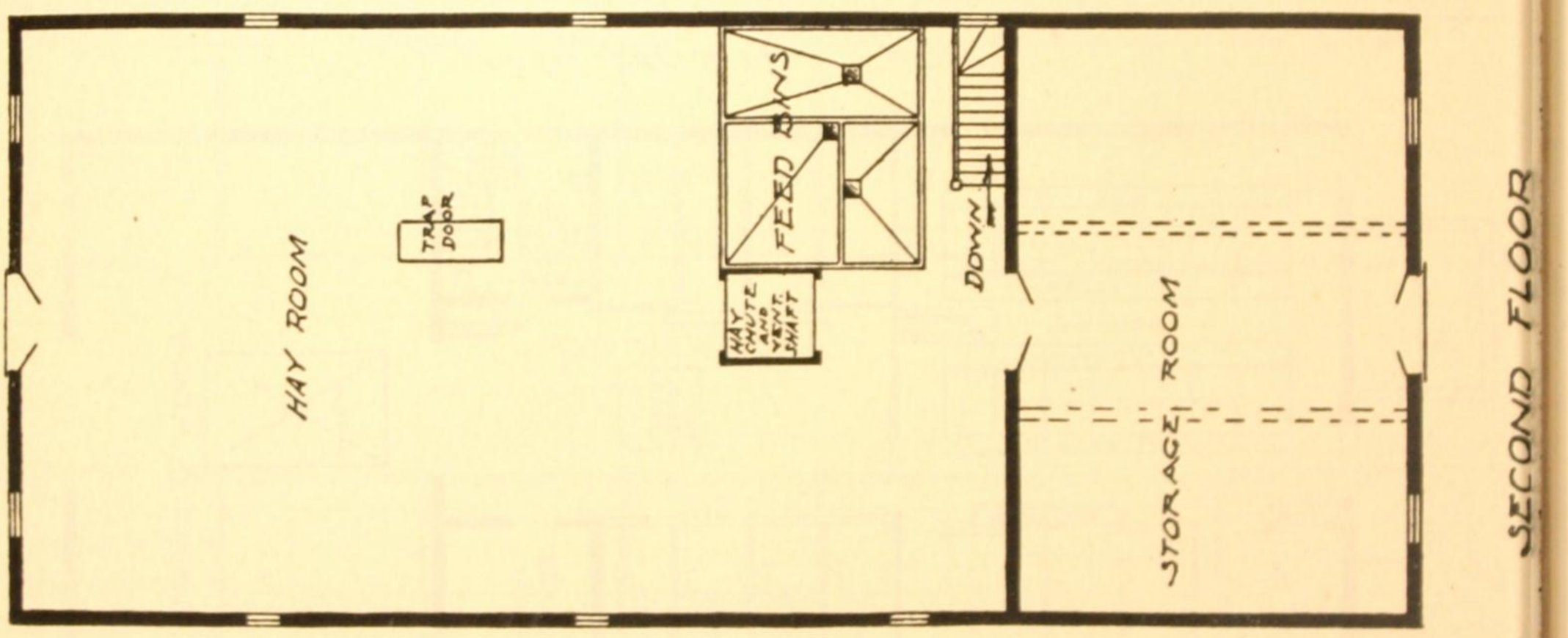
END ELEVATION



CROSS SECTION

made of reinforced concrete and are rounded down to meet the floor at the bottom which makes a very solid and lasting stall.

esting feature of this barn is the two large galvanized iron ventilators with glass tops which conducts the foul air from the bot-



The standing floors in the stalls are covered with planks which of course are renewed occasionally, but the stall bottoms, partitions and cement mangers are there to stay. Horses do not gnaw such partitions and mice and rats are not troublesome, because they find no harbor of protection.

The balance of the barn is of frame construction with a curb roof. Another interesting feature of this barn is the two large galvanized iron ventilators with glass tops which conducts the foul air from the bottom of the stable out through the roof. The cross section shows the cement floor with piers and footings in profile and the cement work is indicated on the different plans and elevations.

Department of Horse Barns

HORSE BARNS

FARM buildings serve their purpose best when especially adapted to the specific use required of them. Horse barns should be different from any other building on the farm. The health and comfort of horses should be the first consideration, but convenience in attending to their wants and requirements, makes a close second.

All horse stables should be well ventilated. Every farmer knows that there is a great difference in stables in this respect. Some stables are so built that you would rather keep out of them if possible because they can't be kept clean. The smell of ammonia is always present and when the doors are shut it is very disagreeable. Imagine shutting a valuable horse up in such an atmosphere at night and expect to find him in good condition in the morning. Horses are the most expensive animals on the farm and the most susceptible to disease; hence, the first consideration in a stable should be to promote the health of the horses.

A horse stable should be cool and airy in summer and it should be warm and well ventilated in winter. The floor should be made in such a manner that it will not absorb the liquids from the manure, and there should be no crack to let these liquids down underneath to ferment and destroy the air in the building. Stable ceilings must necessarily be high enough to permit a horse to get his head up. Horses are warm animals, that is they contain body heat enough to warm a stable when conditions are as they should be.

Before starting to build put a little time on the study of ventilation. Read up on the circulation of warm air. Don't depend on others because they might not understand the particular conditions you are dealing with. It is well enough to ask advice, but get the information from different sources so that you may be able to sift the quality of your instructions sufficiently to keep the grain and discard the chaff. Don't blindly copy a stable that some one else has built without carefully considering whether it fits your requirements. A horse stable that works all right for one farmer is all wrong for another, because his horses may be larger, or has more of them, or he handles them differently. Some farmers have a lot of horses that they press into service in the summer time and turn them out in the yards and sheds to winter. Such farmers usually raise horses to sell and have more than they need at all times. Other farmers keep just what horses they need to do the work. They keep four horses or six horses the year round and they have no intention of altering their usual custom. But in either case a man can arrange a stable for a certain number of horses and build it accordingly.

In cold weather a stable big enough for six horses will not be warm enough if only

two are stabled. If for any reason the stable is too large it is better to fill it up with cows in the winter for the reason that you cannot have ventilation without heat. On general principles it is more satisfactory to keep horses in a building by themselves and it is but little extra expense to do so.

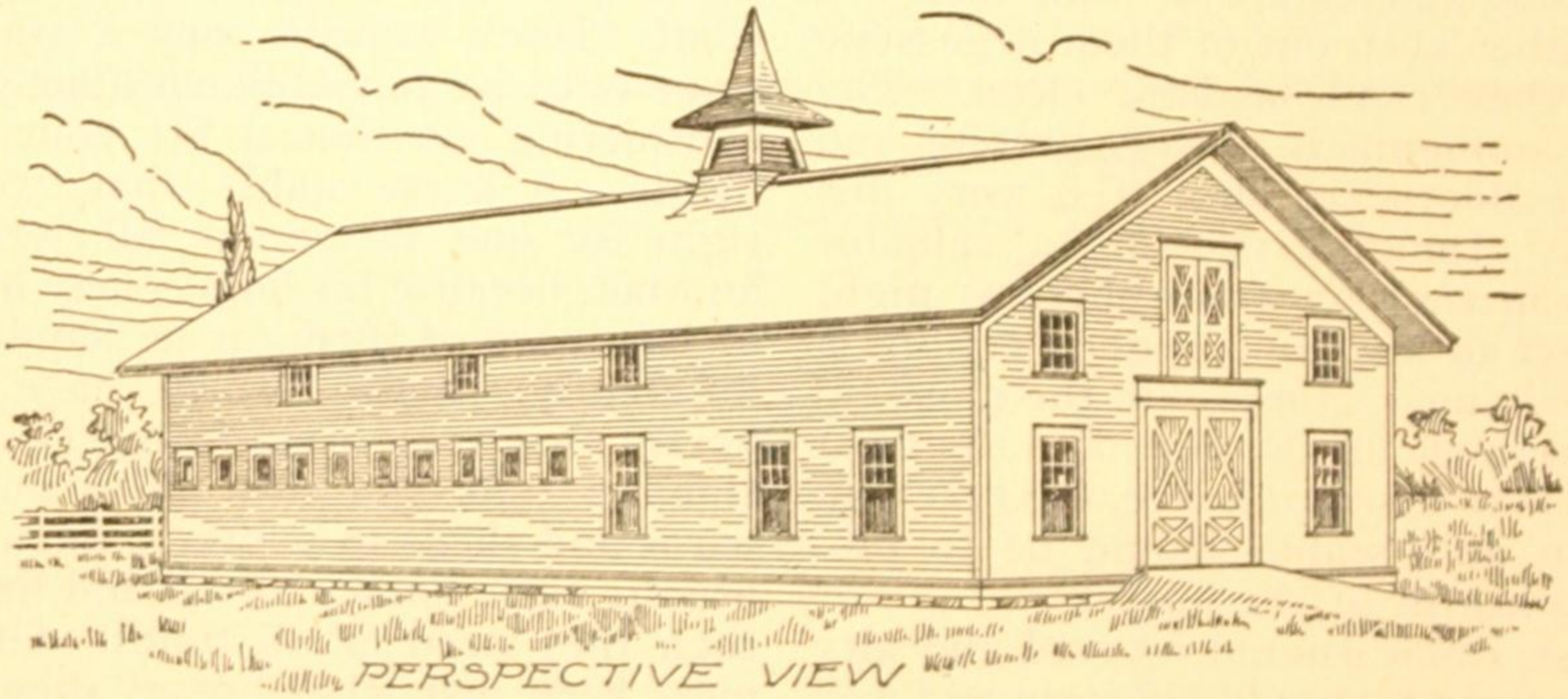
When possible a horse stable should contain a carriage room that is reasonably free from dust. Every man has or should have the ambition to keep a rig for the road that is decently clean. He owes it to himself and his family to provide a respectable turnout. A farmer's family depends for change and recreation on the opportunity to get away from home by means of the horses. They are judged to a very great extent by the apperance they make. You cannot get away from the fact that a person's social standing in the community is largely arranged for them by the opinion of others. No man is independent enough to stand alone. A man's usefulness in the community depends largely upon the appearance that he and his family make on dress occasions, and the appearance in turn depends very much on the horses, harness and wagons that they use when driving on the public road.

PLAIN HORSE BARN—A161

Cost of Blue Prints, $15.00

A plain straight-away horse barn with ten single stalls, five box stalls, feed room, harness room and vehicle room with a wash platform in the center is given in this plan. There is a driveway through the center wide enough to admit a load of hay or a load of straw, if so desired, but there are doors opening outside in the gable to pitch in hay and straw, either by hand or horse fork, so it would not be necessary ordinarily to drive inside with a bulky load, but a good passageway between horse stalls is a great convenience anyway.

This barn will easily accommodate fifteen horses and it will hold feed enough to supply them for a long time. The building is thirty-seven feet wide by sixty-eight feet long. It is set on a stone foundation with two rows of stone piers supporting the floor joists and posts which run to purlin plates.



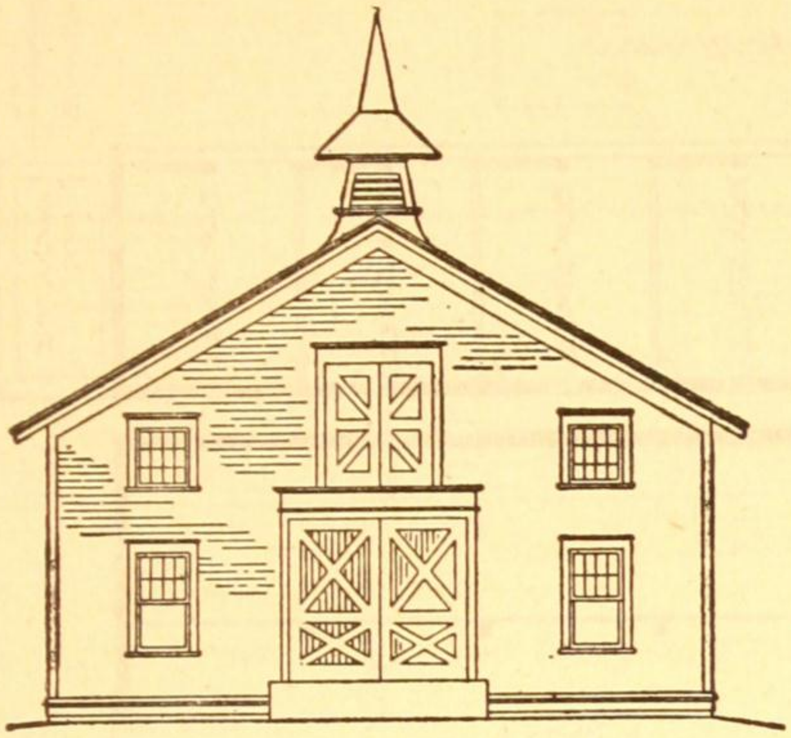
PERSPECTIVE VIEW

There is a large vent shaft running from the stable ceiling to and through the hay mow with doors for throwing down hay or fodder as well as for ventilation. Grain in sacks can be hoisted up this ventilator shaft and conveniently dumped into feed

bins which have hopper bottoms and spouts leading to the mixing room below.

In the driveway at one side of the mixing room door is a water supply pipe and watering trough with a hose connection to supply water to the wash room on the floor of the vehicle room.

The stalls are floored with a double



FRONT ELEVATION

thickness of oak flooring one and three-quarter inches thick slightly sloping to cast iron gutters, which run the entire length of the stall room on each side of the driveway. The first thickness of these stall floors is laid in hot tar, then two thicknesses of tar roofing felt is put on being well mopped over with tar, and this covered with the upper thickness of oak one and three-quarter inch flooring.

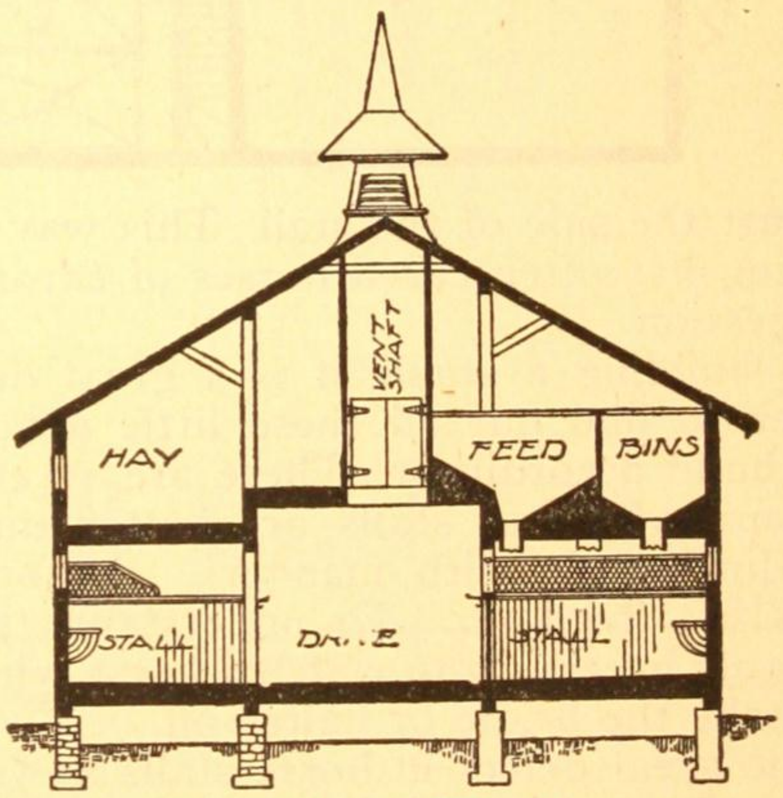
Where a great many horses are to be fed overhead feed bins are a great convenience. The bottoms may be made hopper shape as shown in the plan, or they may be level. A hopper, of course, is best, but with a flat bottom a little accumulation of grain around the edges at the bottom is all that remains when the grain stops running down the spout, and flat bottom bins are cheaper.

The main entrance doors are both wide and high. Unless the door is large enough it is sometimes difficult to get out. The door must have a good height because you want room for a carriage or a top buggy. We all have had experience in catching a buggy top on the lintel of a low door way. It seems to be the proper occasion for saying things. No builder likes to have such remarks made about him.

There is a good row of box stalls. It is difficult to plan a decent sized box stall in a small stable. They run into room too fast. Nothing looks so comfortable for a good horse as a roomy box stall. If the horses had their way about it there would be more box stalls, but it really requires about three times as much room to stable horse in this way. No man begrudges the room, but most men don't like to put up money enough to enclose it properly.

The ideal arrangement for stabling a horse is a big box stall with a good sized window for light and a door cut in half so that the upper part may be left open during the daytime to let the horse look out. A box stall shut up tight is a prison for a horse, they like to see things as well as other folks.

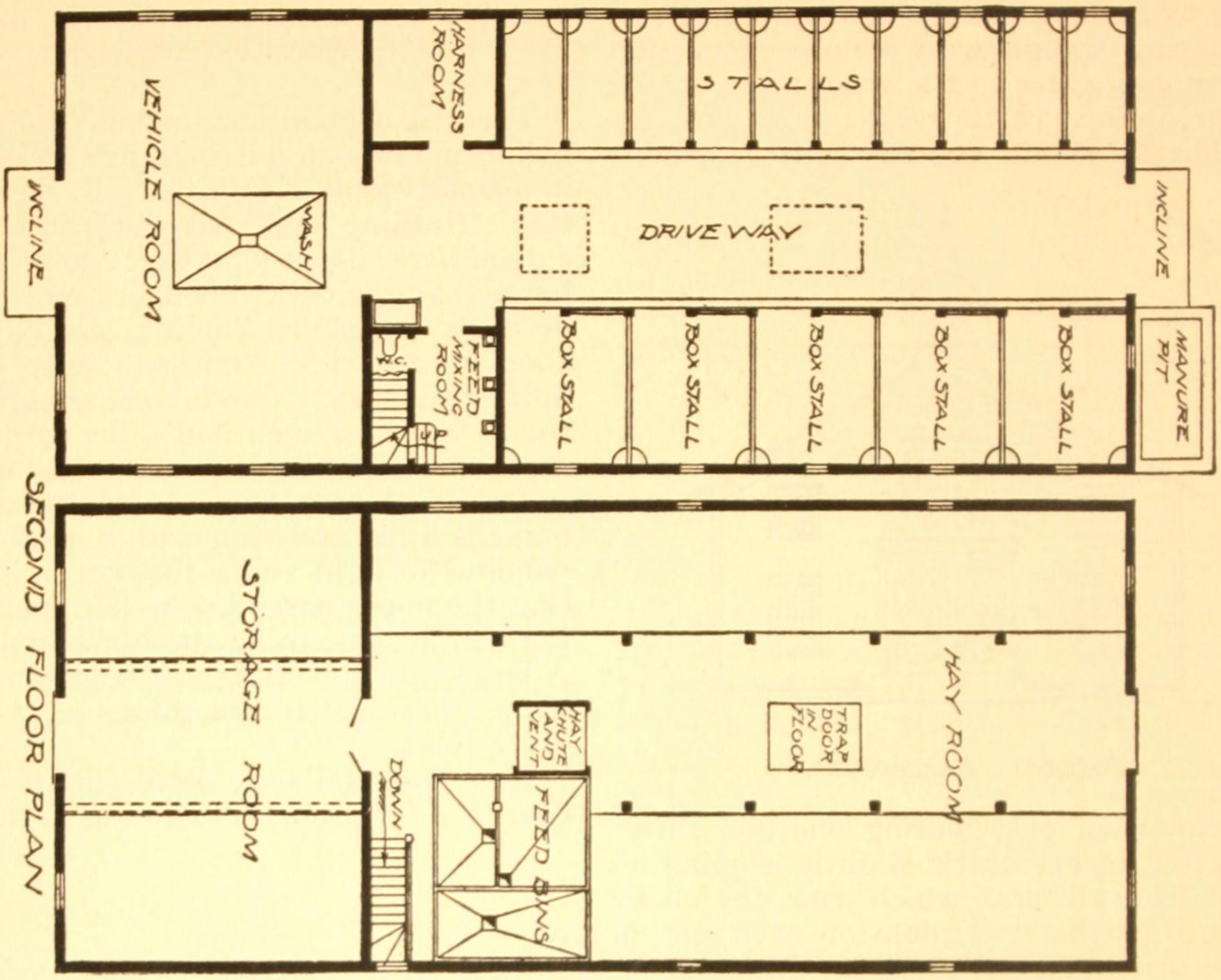
Some box stalls are fitted with rubbing boards. They consist of planks about two



CROSS SECTION

inches thick turned edgewise to the horse and fastened to the sides of the stall just low enough down so the horse can't rub his tail. A box stall needs no floor and there should be no feed rack or manger. A box on the ground to feed oats is all the

manger necessary. The hay should be put in at frequent intervals in small quantities placed lightly on the floor or bedding against the side of the stall. This way of feeding has often cured horses of chronic indigestion.



In building a stable it is a great deal better to find out all these little details and build accordingly. There are several reasons why box stalls are better than standing stalls with mangers. A horse loves his freedom. To understand this it is only necessary to watch a horse when you take the bridle or halter off.

One great defect in horse stalls as you ordinarily see them is lack of ventilation. It is quite common to see the inner walls of a stable in winter white with frost. The frost wouldn't be there if the stable was dry as it should be. It is not necessary to put in an elaborate system of ventilating pipes in a small stable. The windows and doors are sufficient if they are managed right. The breath of one or two horses is easily taken care of, but even in small stables such things often are neglected.

In this plan the carriage room is closed off from the stable which is right. The odor from the stable is a damage to the carriages and to the rugs. The stable should be warmer than the carriage room so the door works right from both sides.

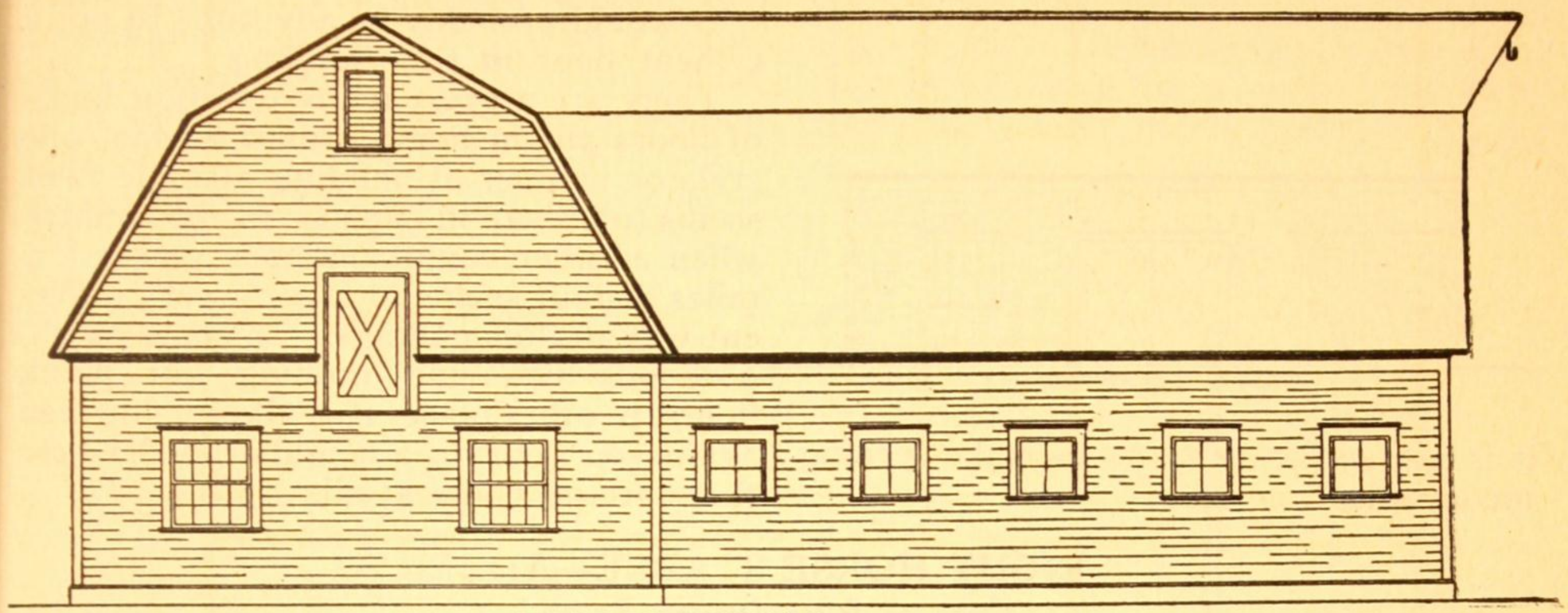
CONVENIENT HORSE BARN—A133

Cost of Blue Prints, $15.00

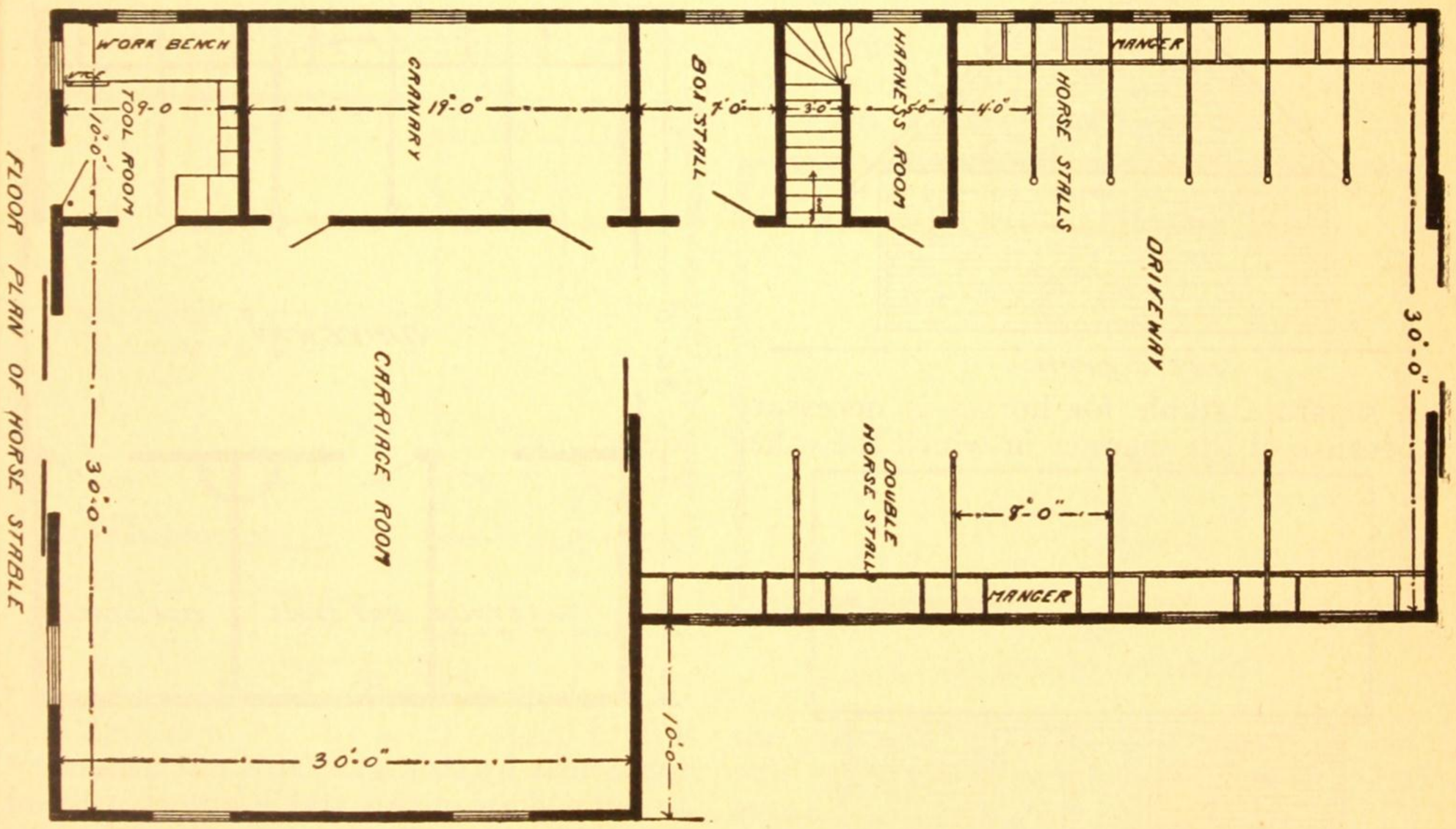
Men who keep good horses will appreciate this plan. The arrangement of the stalls is convenient and there is a good carriage room in which to keep vehicles away from the stable part and out of the dust. Every farmer who takes pride in

his horses likes to have a nice rig to drive, and it is impossible to have it without conveniences for keeping it clean. With a good carriage room and a good harness room there is no excuse for dirty buggies or an unsightly harness.

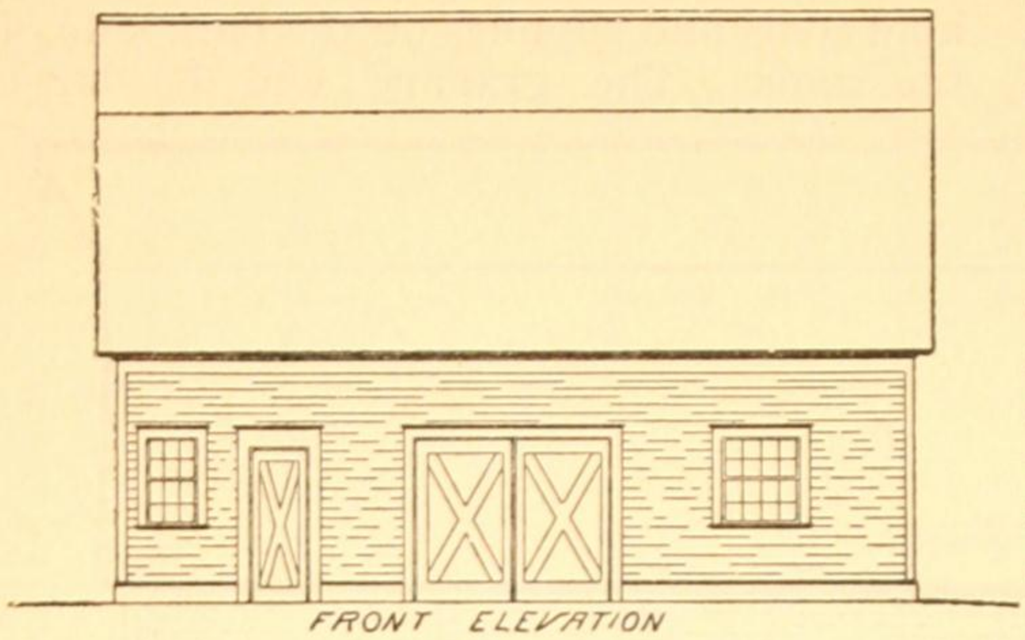
A feature of this barn that should attract special attention is the tool room. It is nine by ten feet in a front corner of the building with two good windows for light. There is a general work bench with a vise on one end and there are boxes to hold tools and supplies on the dark side of the room. The granary will be large enough or not according to the other buildings on the farm. Where there is a large grain barn for threshing a smaller granary in the horse barn seems to answer every purpose. The granary in this plan is placed right because it may be shut off



SIDE ELEVATION



with two doors from the stable part, still



it is not so far away as to make feeding inconvenient.

There is room overhead for a good deal of hay and straw. The hay carrier wiil bring this stuff from the back end pretty well through to the front.

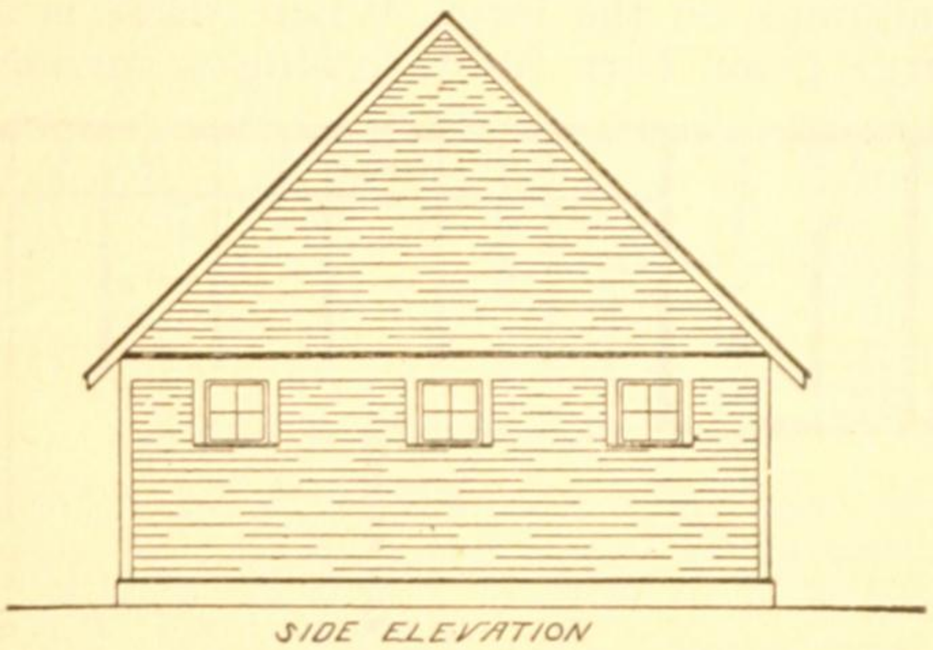
It would probably be advisable to put a cement floor in this building.

There are a great many different kinds of floors put in horse stables, in fact one style or manner of building a stable floor seems to prevail in one part of the country when another county perhaps just a few miles distant seems to favor a very different way of doing things. In some neighborhoods you find nothing but plank floors, in other places it is all cement, then again you get into a neighborhood where there are no floors at all.

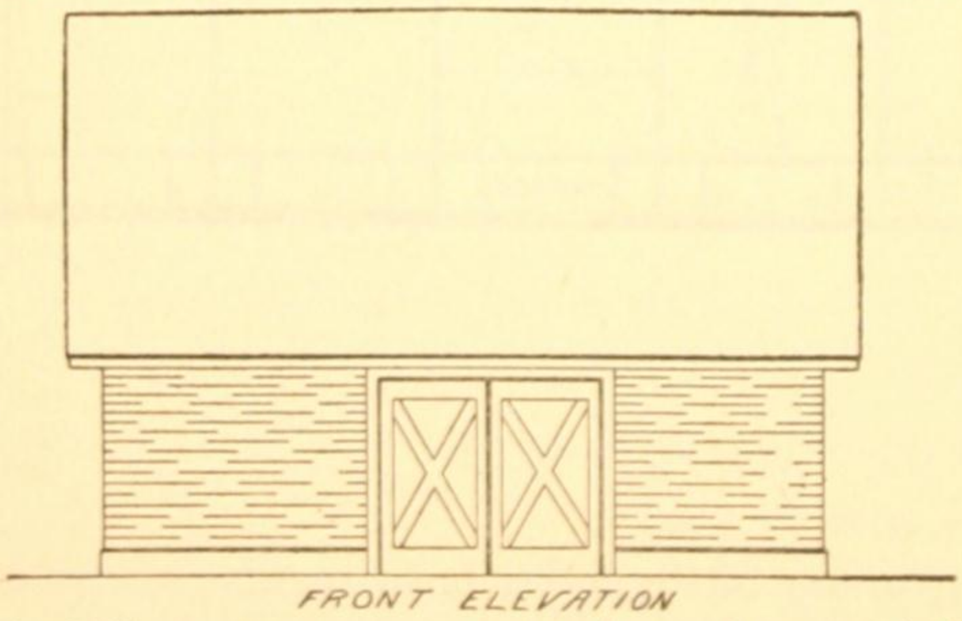
EIGHT HORSE STABLE—A124

Cost of Blue Prints, $5.00

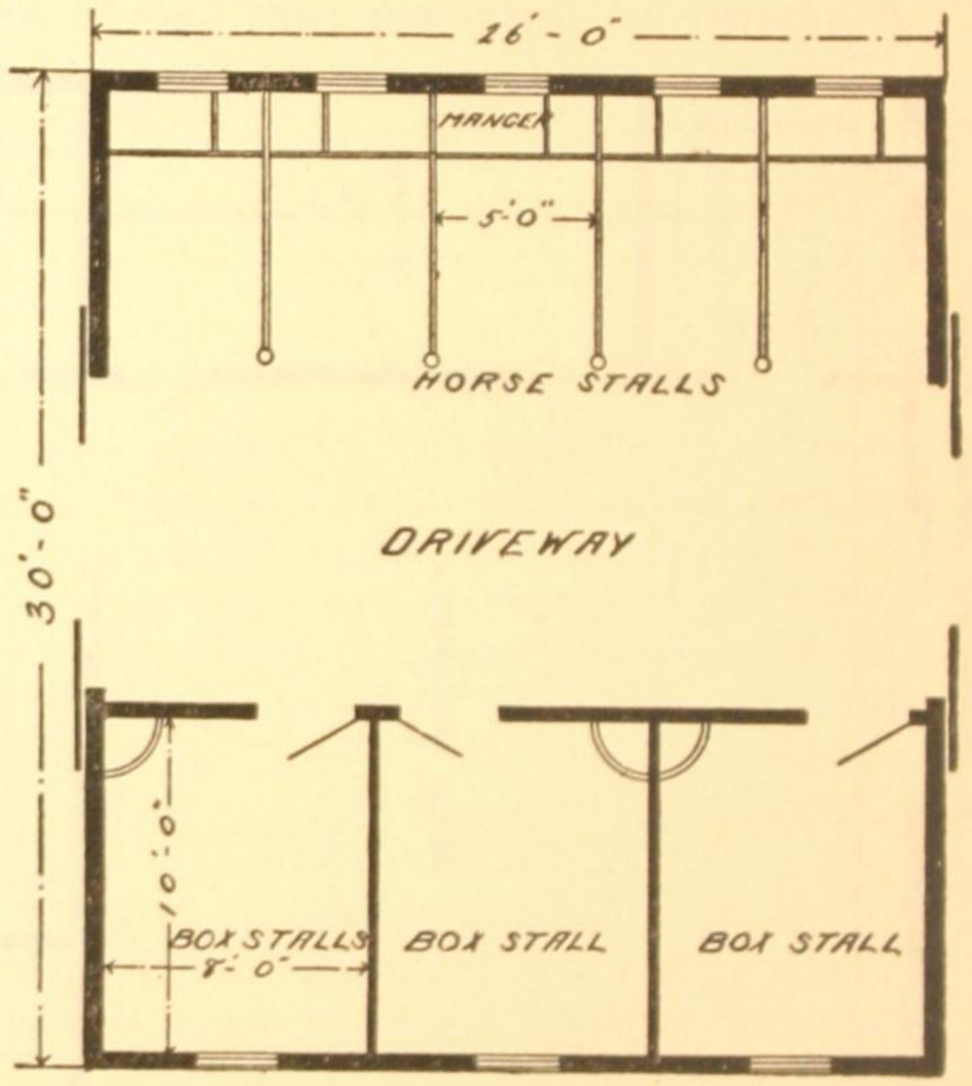
A small cheap horse stable is shown in plan (A124). It sometimes happens that



a separate stable for horses is necessary because of the manner in which the other



buildings are constructed and occupied. This little stable will accommodate eight horses and there is room enough overhead to hold the straw for bedding, but it would be necessary to provide the feed from

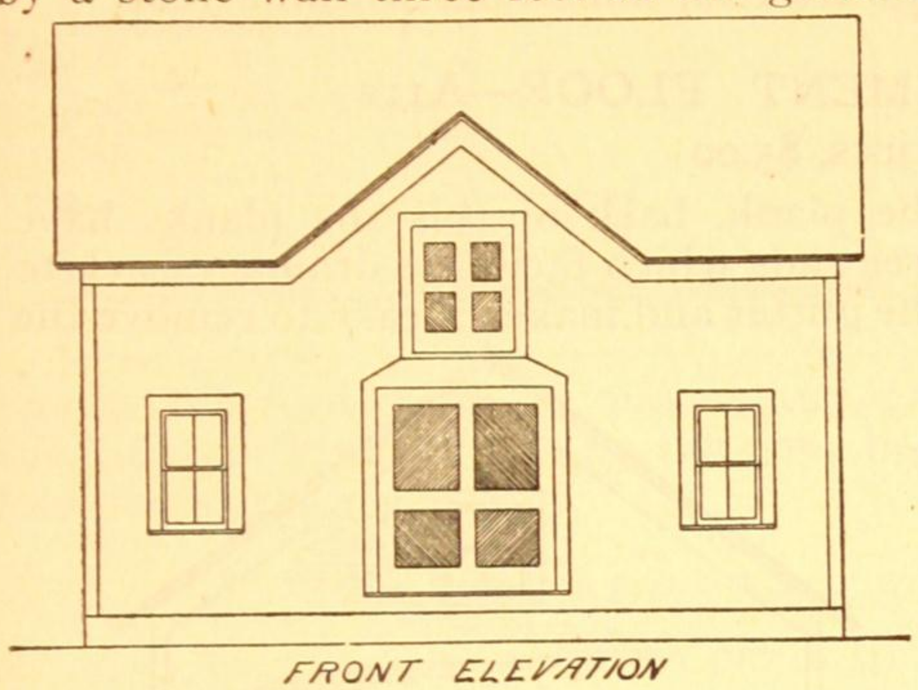


some near-by storage. It is not necessary to put a floor in this stable unless it be on the side where the open stalls are built. But a good many horse stalls have stiff clay pounded in and there are plenty of horsemen who prefer such stable bottoms.

CITY STABLE FOR TWO HORSES—A114

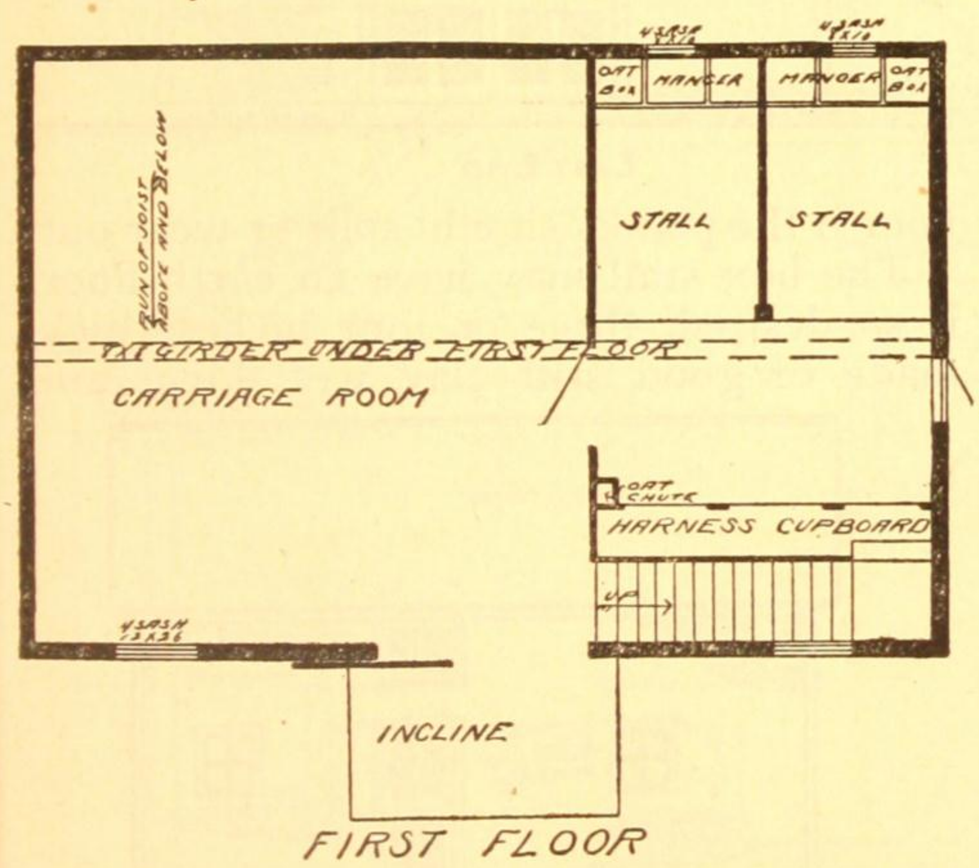
Cost of Blue Prints, $5.00

A very neat carriage house is shown in plan (A114). It is intended to house two horses and have room enough for a couple of carriages. The building is supported by a stone wall three feet in the ground



FRONT ELEVATION

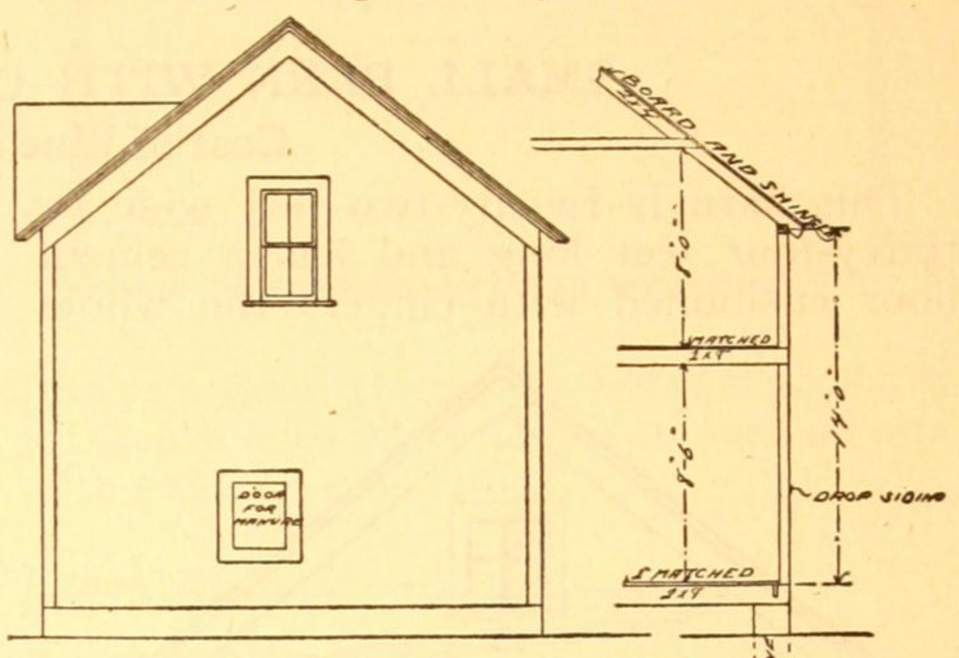
and one foot above the ground to keep the floor well up, but the height of course must depend on the nature of the ground and location in reference to the street and driveway. It is not desirable to approach



FIRST FLOOR

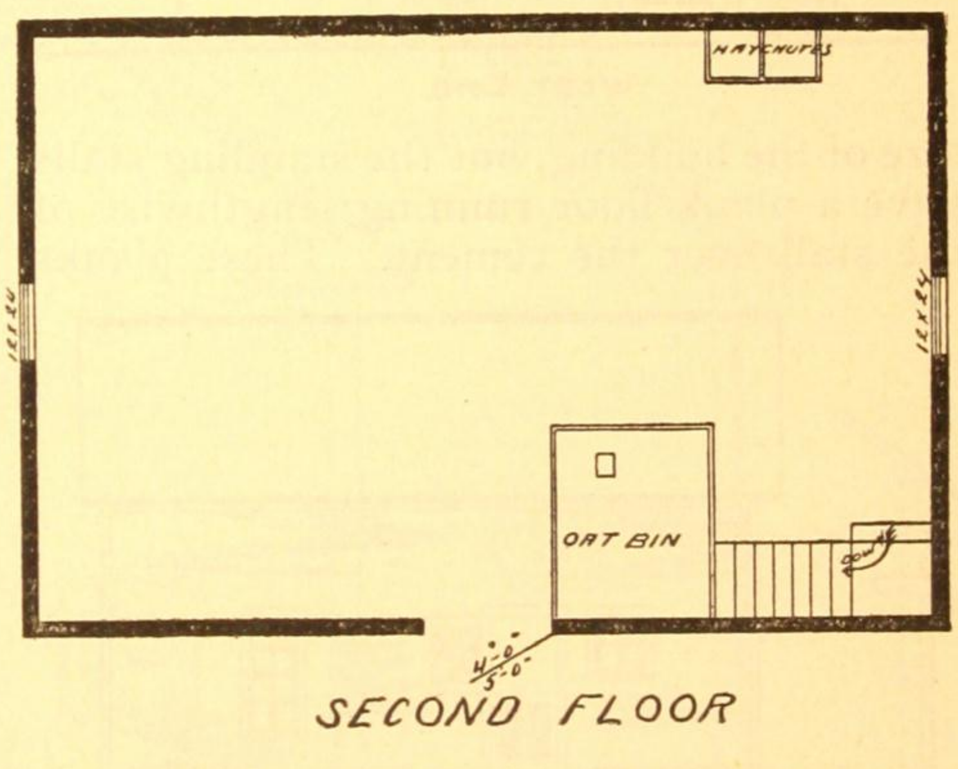
the main doorway by a very steep bridge because it is often necessary to run carriages out and in by hand. Of course if it is necessary to set the floor up the driveway may be raised accordingly, this however very often runs into considerable expense.

The way a driveway approaches the stable affects the appearance of the stable a good deal. Generally a pleasing effect may be obtained by a curved driveway where it is kept neatly trimmed at the



SIDE ELEVATION SECTION

sides. If the driveway is gently rounded and the edges kept about two inches lower than the sod it is easy to maintain a clean track and a well defined edge without putting a whole lot of unnecessary work on it. The lawn mower will trim



SECOND FLOOR

the grass and a spade used once a month will keep the edge of the drive in good shape.

The floor of this carriage house is made solid by running a heavy girder lengthwise of the building through the center. Joists are carried from the sills to meet the

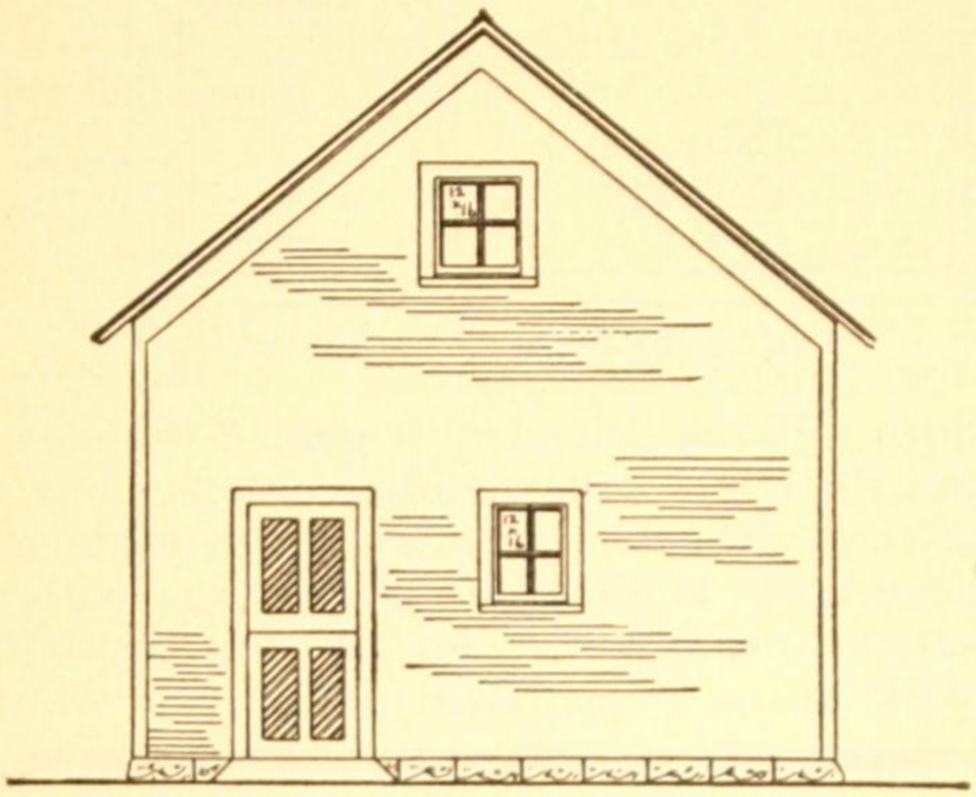
girder. The floor is double, the first layer being an inch thick dressed on one side to make the boards even in thickness, is laid diagonally. On top of this is laid a layer of felt roofing mopped with tar, both underneath and on top. The upper floor is one and three-eighths matched hard pine.

In the stalls two inch planks are laid lengthwise, having an incline of two inches in the length of the stall. These planks are nailed to one cross piece in the middle and another cross piece a little thicker under the manger, but the nailing is not very solid because stable planks soon wear through and it is necessary to turn them end for end, sometimes within a year.

SMALL BARN WITH CEMENT FLOOR—A112

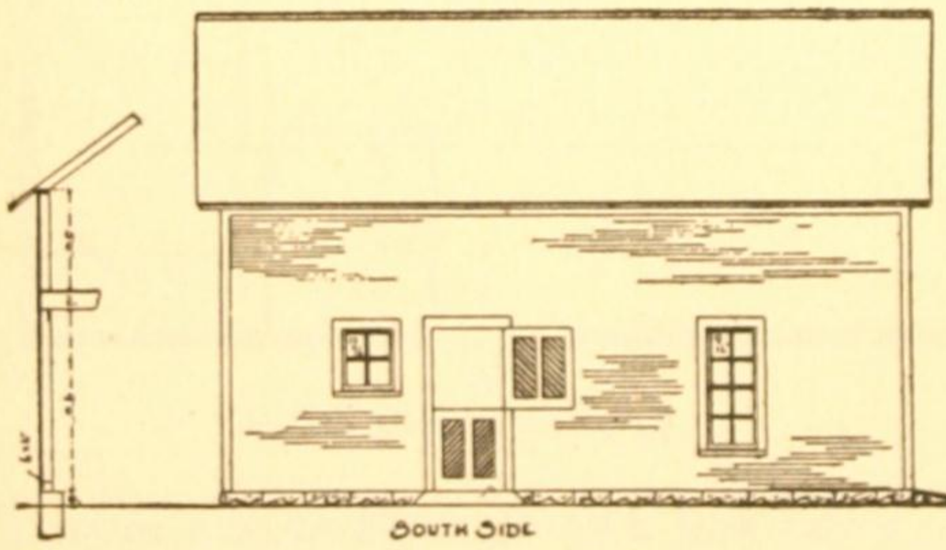
Cost of Blue Prints, $5.00

This barn is twenty-two feet wide by thirty-four feet long and has a cement floor cushioned with cinders the whole



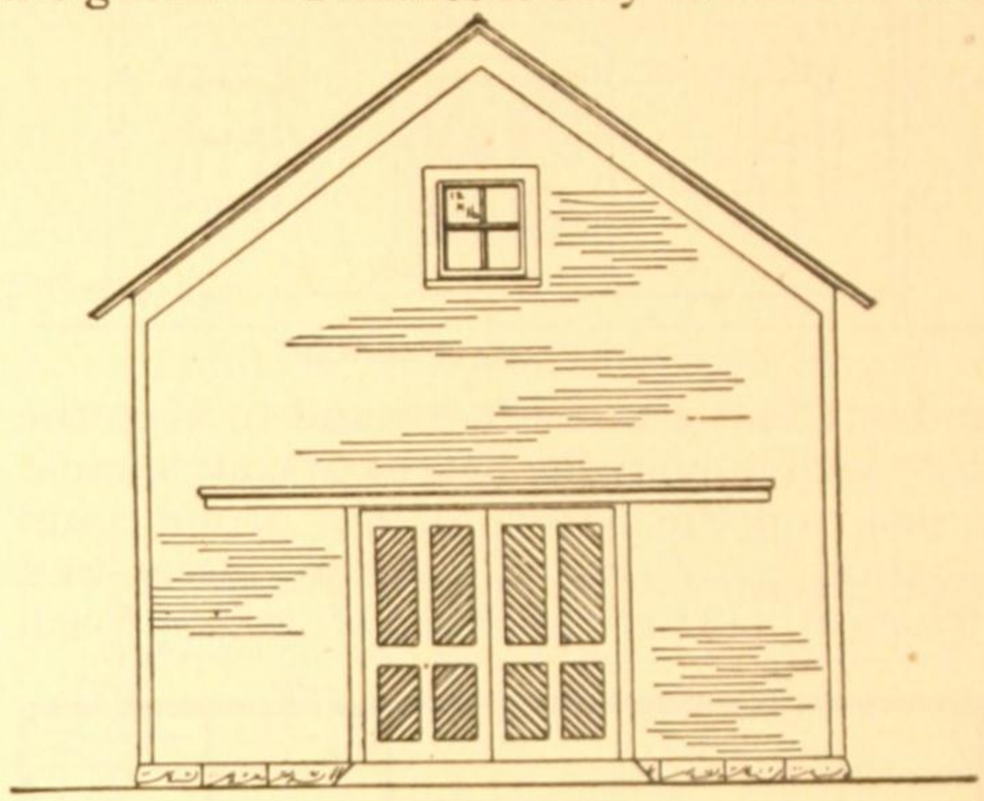
WEST END.

size of the building, but the standing stalls have a plank floor running lengthwise of the stall over the cement. These planks



SOUTH SIDE.

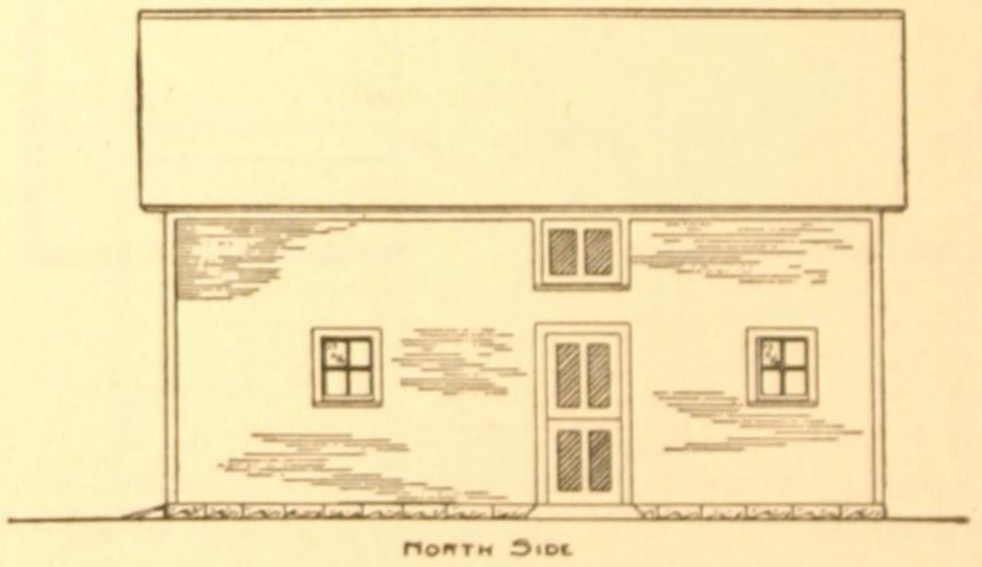
are not fastened except to two cross pieces —one under the manger is a two by four laid under the plank to give them the proper pitch. Another cross piece an inch thick is placed in the middle to strengthen the plank, back of this the planks have free ends which facilitate drainage back to the gutter and makes it easy to remove the



EAST END.

floor if the planks should split or wear out.

The box stall may have an earth floor, if so desired, three or four inches thick, made of good stiff clay wet down and

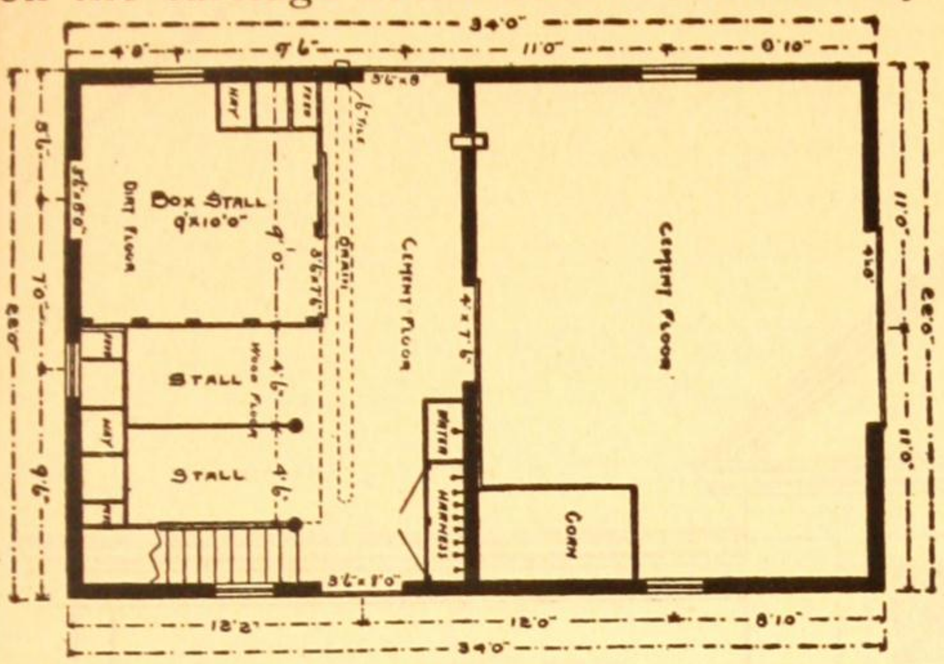


NORTH SIDE.

tamped level over the cement. Some horsemen prefer a cement bottom with a foot or two of straw; either way is good enough if the horses have the right kind of care.

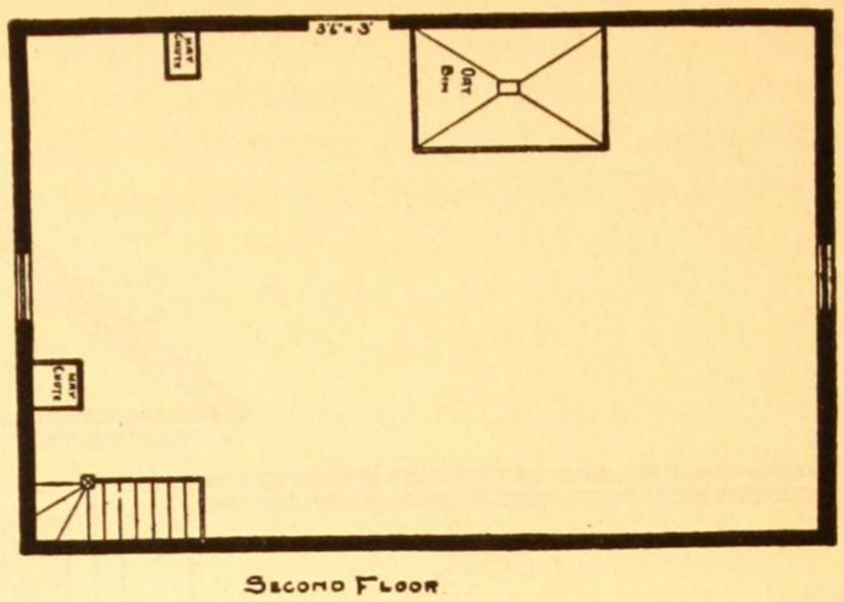
The oat bin is in the hay loft and the

corn bin may be put there too if the space on the carriage room floor is needed. By



having the feed overhead and chutes for the different kinds of feed to the floor below, feeding is made easy.

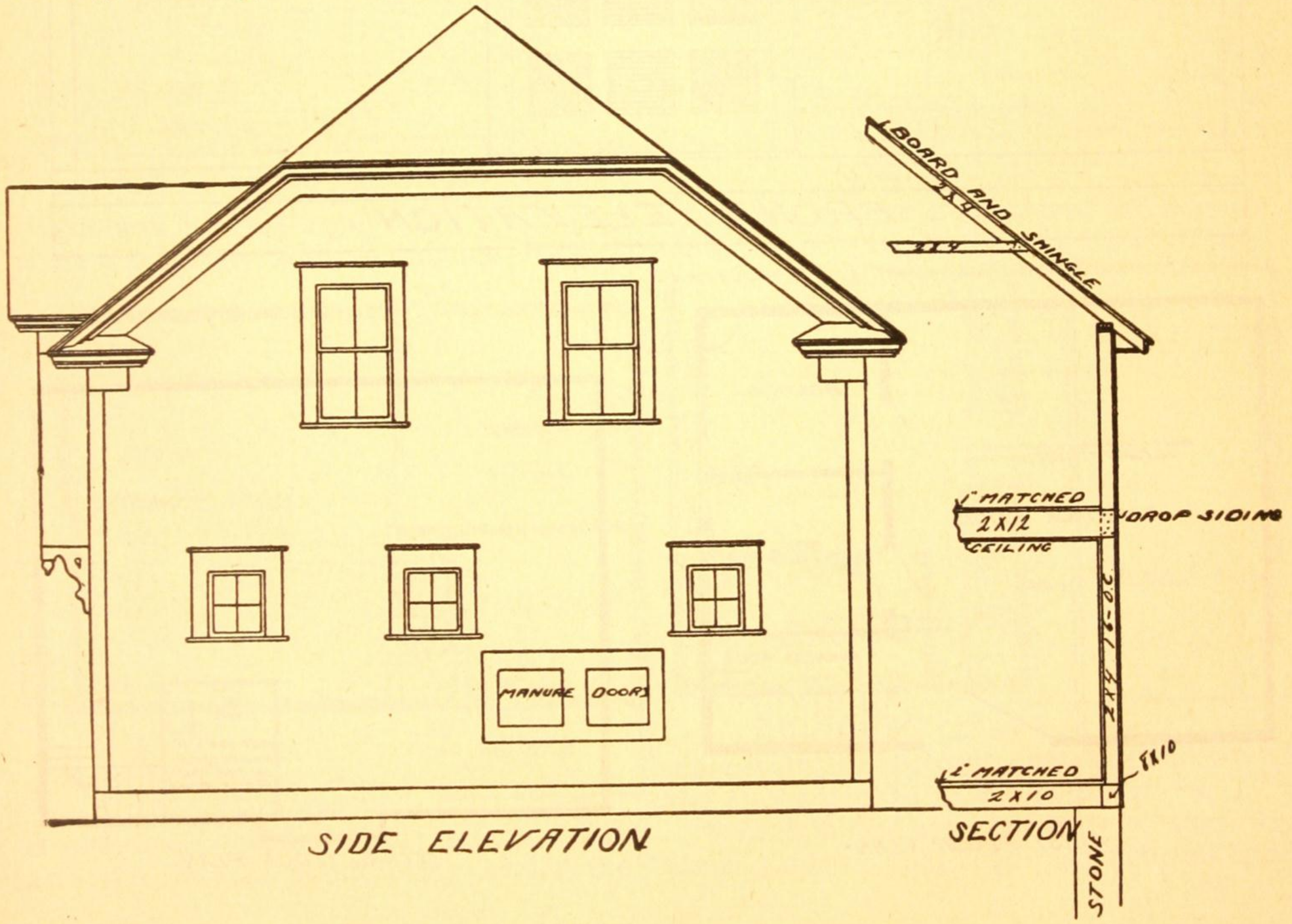
Sliding doors usually are preferred for a horse barn, and half door for ventilation is a good thing. A horse will stand for hours with his head out of such a door with evident satisfaction.



VILLAGE STABLE WITH CELLAR—A116

Cost of Blue Prints, $5.00

A very neat, attractive stable for a city or village is here given. A good stone wall is laid down below frost, or it may be carried a little deeper and the part under the



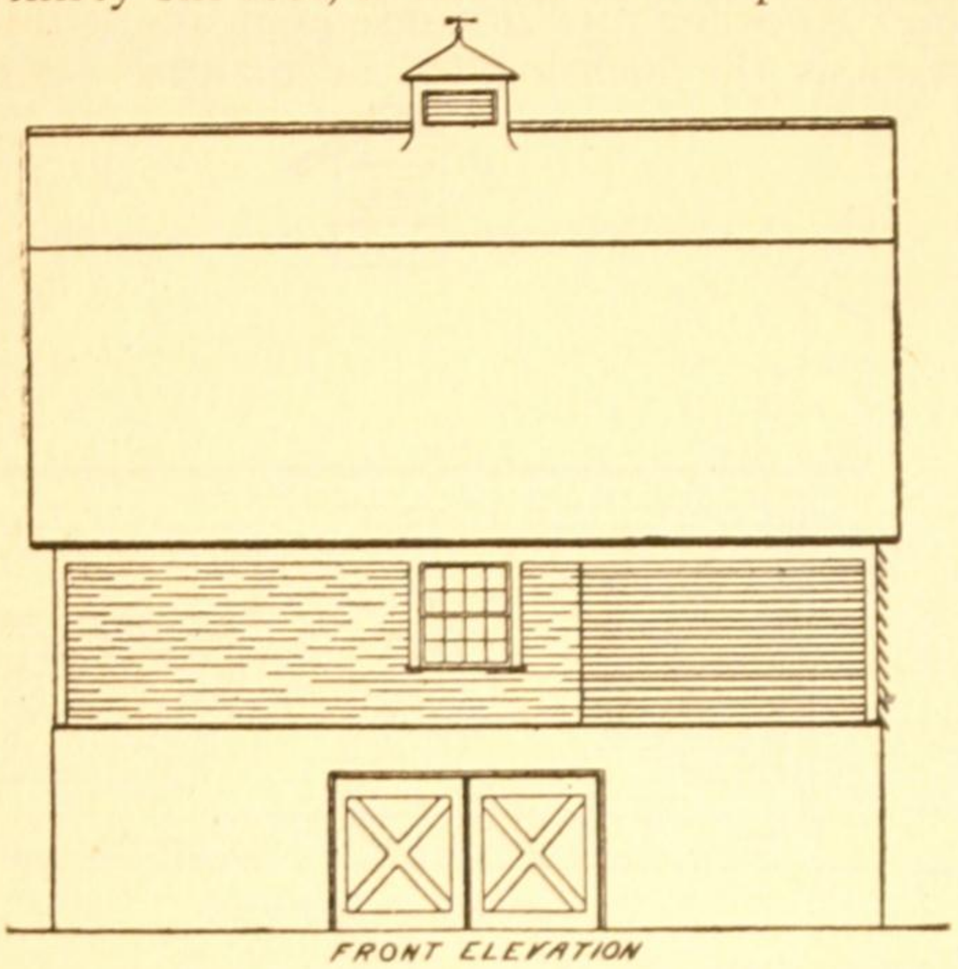
more or less garden work to look after. For this reason it is often necessary to keep a man and it is desirable to have a room that he can occupy outside of the house. It is a good thing to have a man sleeping in the stable where valuable horses are kept so this arrangement works first rate for several reasons. It is hard to keep good men even in town unless they have comfortable accommodations. This building is thoroughly well constructed and the room arranged for the man is more comfortable than similar rooms in some houses.

THREE STORY HORSE BARN— A117

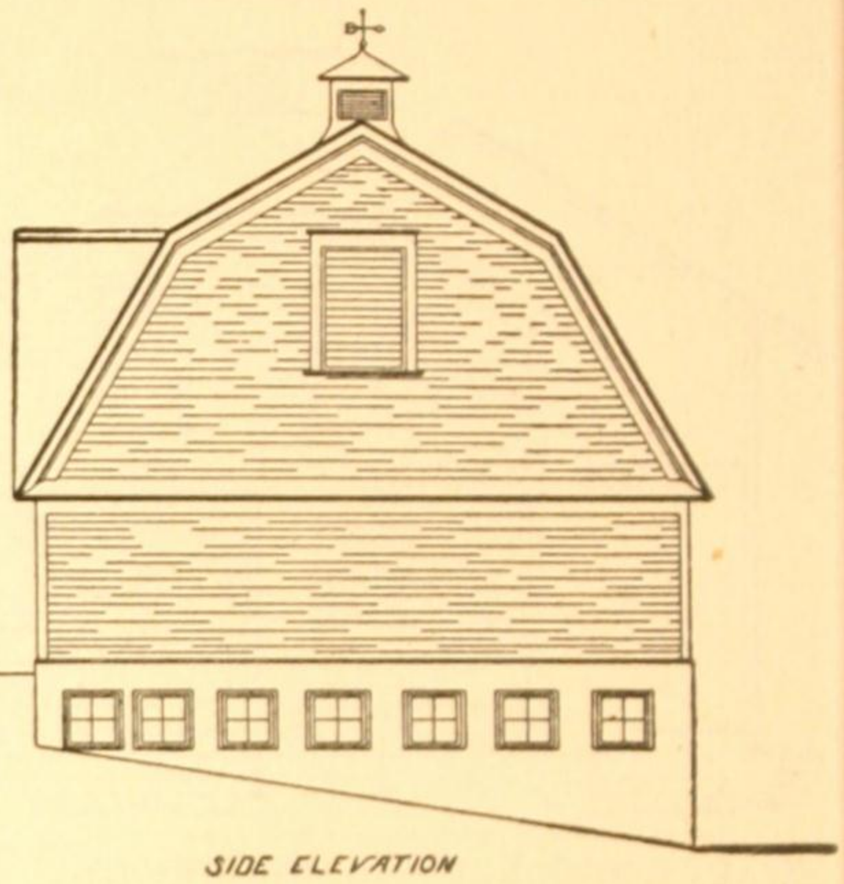
Cost of Blue Prints, $10.00

A bank barn for horses, thirty-two by thirty-six feet, is shown in this plan. The stable is in the basement and on the main floor there is a driveway with a corn crib on one side and bins for grain on the other. Above this main floor is mow room for hay and straw.

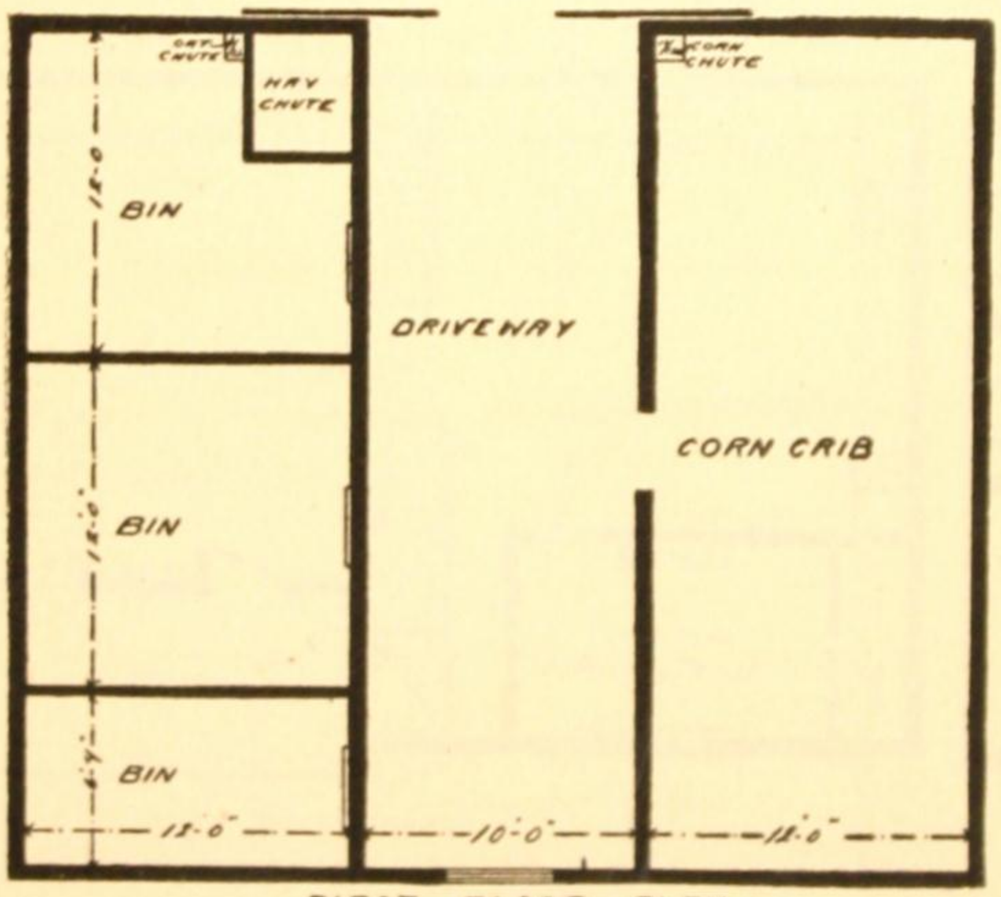
This barn will furnish stabling for eleven horses in the basement, besides a feed room which is connected with the grain



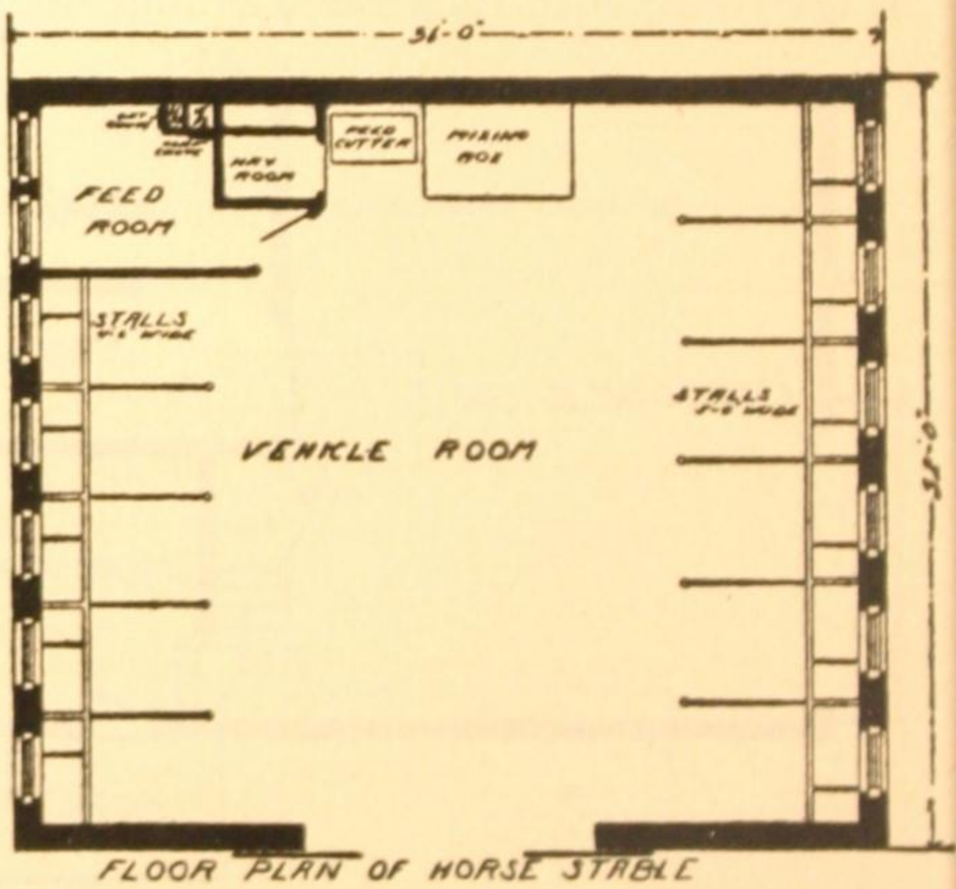
FRONT ELEVATION



SIDE ELEVATION



FIRST FLOOR PLAN



FLOOR PLAN OF HORSE STABLE

stable is in the basement and on the main floor there is a driveway with a corn crib horses in the basement, besides a feed room which is connected with the grain

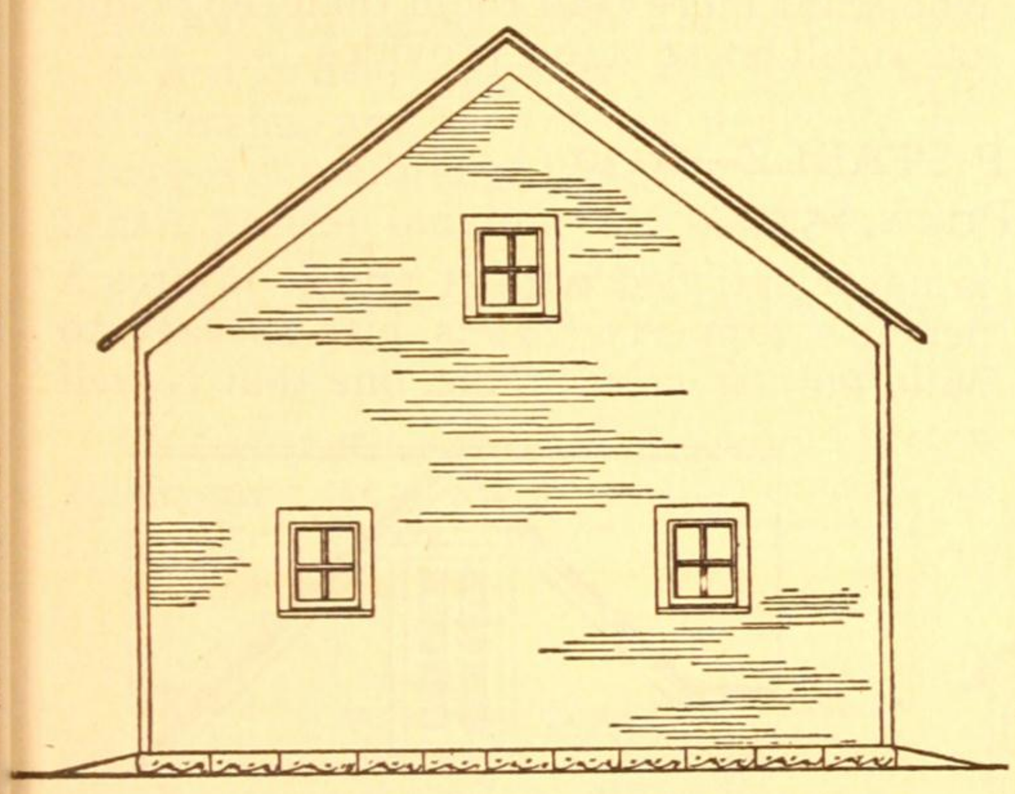
bins above and the corn crib as well as hay mow by means of chutes. The hay and oat chutes are perpendicular and pass straight down from the loft and from the grain bin to the feed room below. But the corn chute is built diagonally across under the main driveway floor to carry it over to the feed room. The reason for this is that all feed rooms should be shut off from the stable with a good door. Most of us have had experience with horses getting loose at night and eating more grain than was good for them. This corn chute is twelve by fourteen inches, which is small enough, considering that it is a slanting chute. All grain chutes when built in this way require to be larger than when placed vertical, because there is more friction in the passage of the grain in coming down.

The corn crib is ventilated on three sides by using narrow strips nailed to cleats slanting outward. This will answer for corn that is reasonably dry, but unless the weather is favorable it is not a good plan to fill a bin like this full of corn without some kind of a ventilator in the middle.

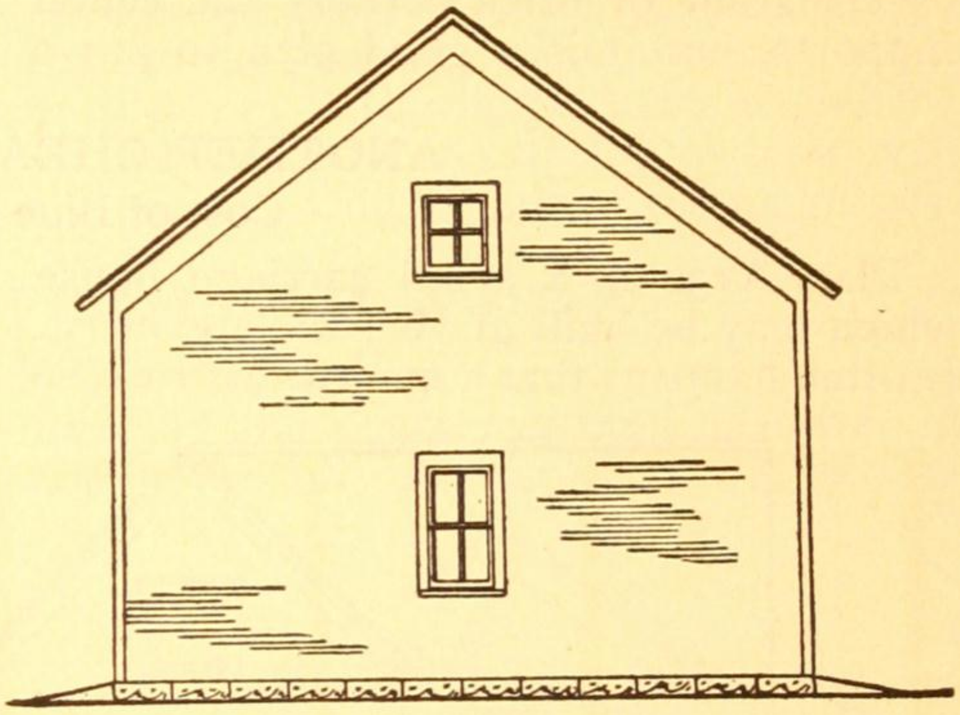
CHEAP HORSE BARN—A113

Cost of Blue Prints, $10.00

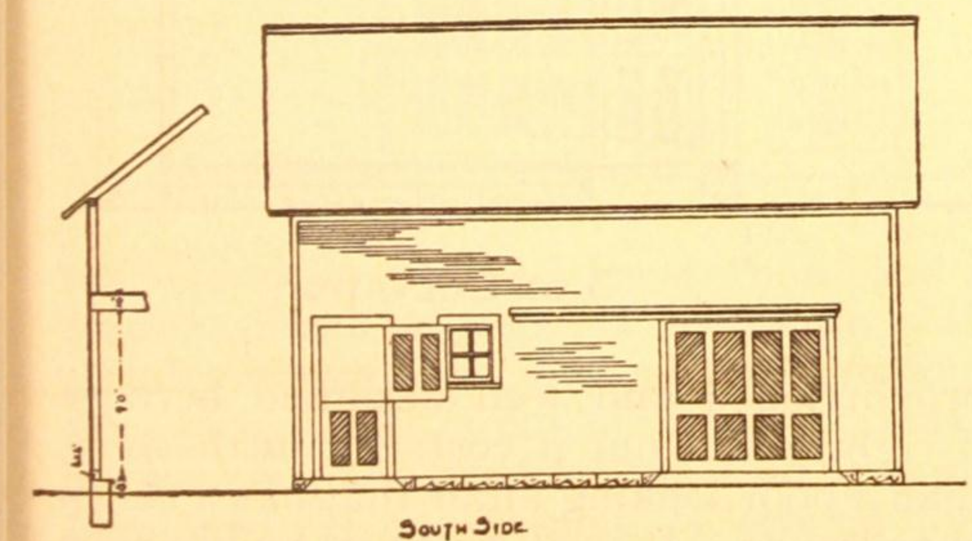
A small barn with two double stalls and one single stall with standing room for another horse is offered in this plan. The barn is twenty-six feet wide and thirty-two feet long, one half of which is partitioned off for a stable and the other half



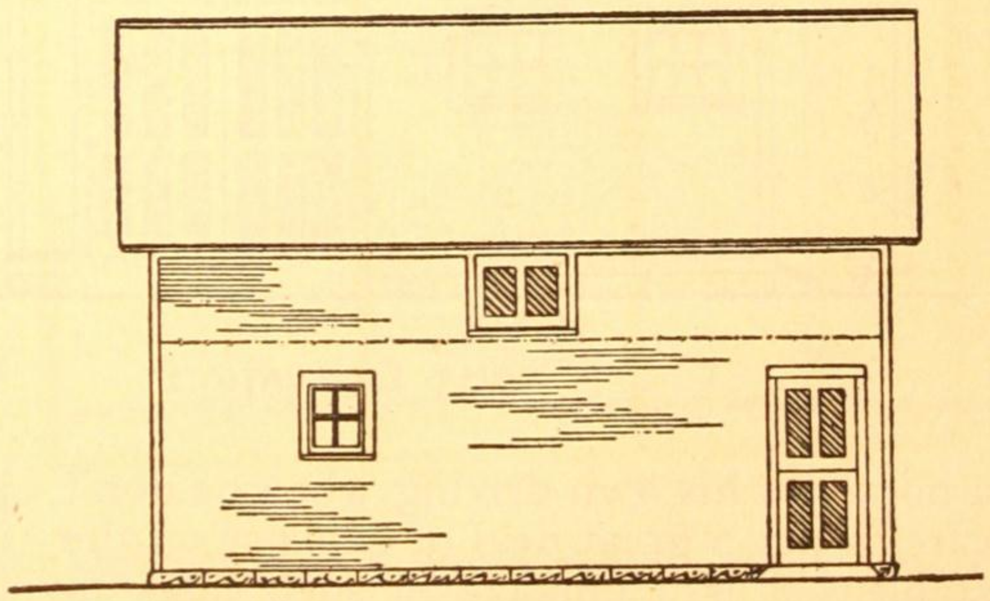
WEST END.



EAST END.

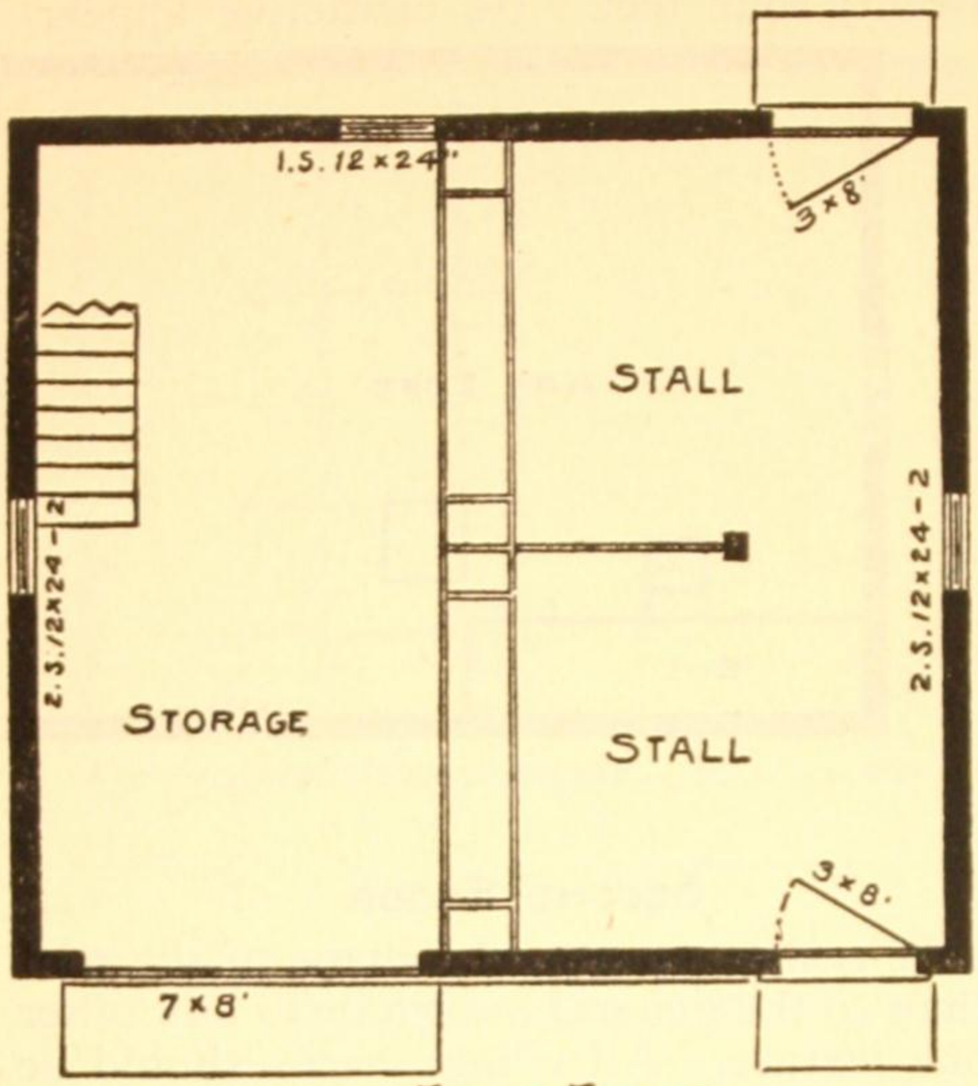


SOUTH SIDE.

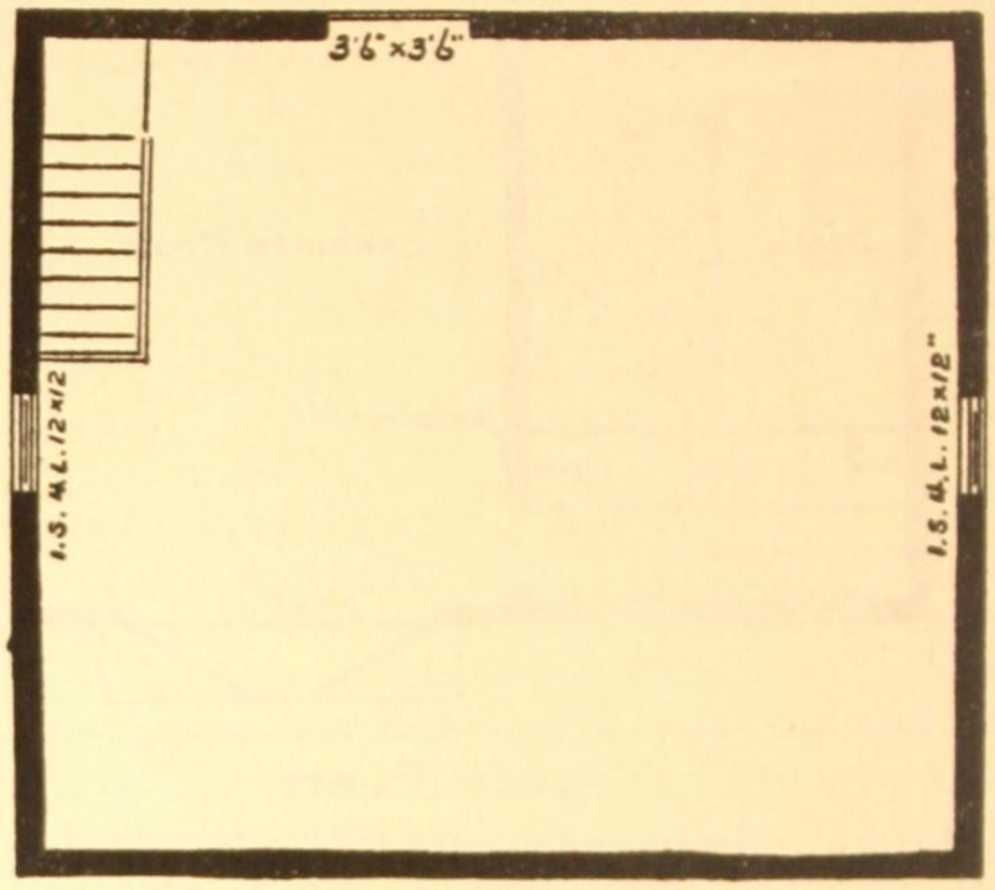


NORTH SIDE

stones placed at the corners and one or two places along the sides but this is objectionable because it makes a harbor underneath for vermin. The foundation should have some air but air enough will penetrate through the chinks between the bricks if they are laid without mortar.



FIRST FLOOR



SECOND FLOOR

The construction of this little barn is about as plain and simple as it could be and still have it look right when finished. Nobody likes a cheap looking building, but no one objects to a goodlooking building if they get it cheap. The problem is how to build what will be satisfactory in a few years' time. Sometimes an inexpensive building may be shaded with trees or screened by vines in such a way as to give it a presentable appearance even in winter. An evergreen or two planted along the side, if there is plenty of room, makes a great winter addition to the looks of a stable. Grape vines usually do well if suspended by wires from the eaves, but grape vines should never be tacked close to the side of a building, they need air on all sides.

SERVICABLE BARN—A172

Cost of Blue Prints, $10.00

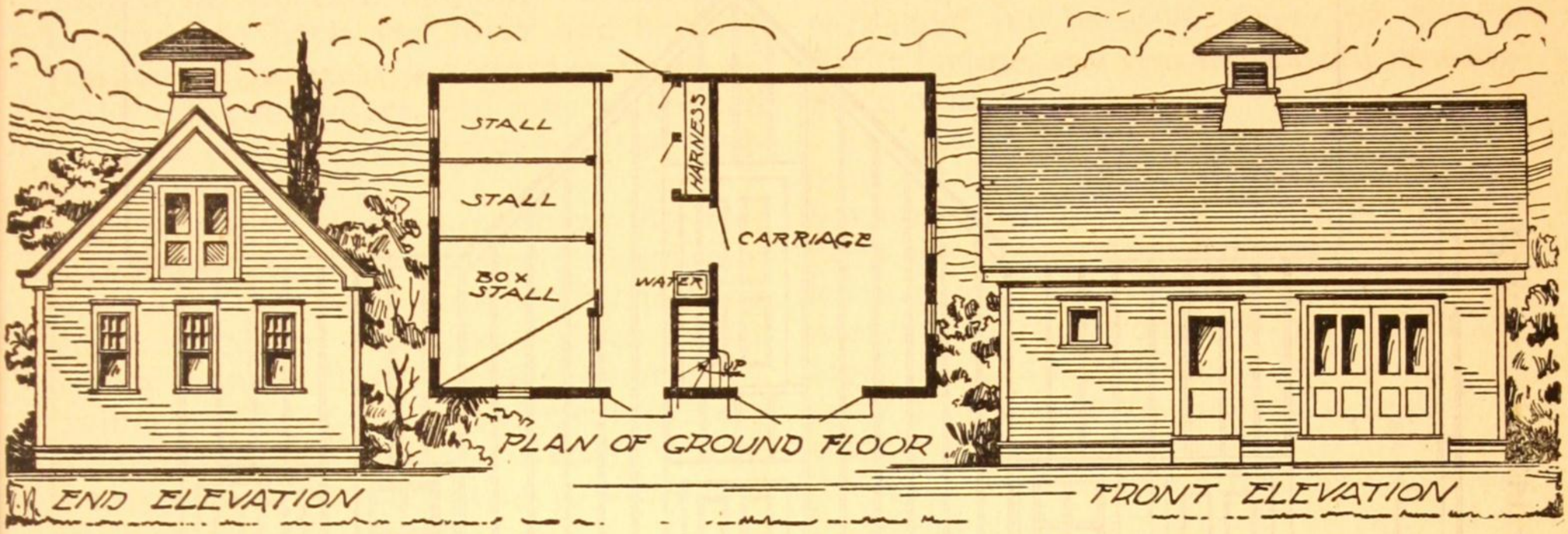
This is a small barn, twenty feet by thirty-two feet, and contains a carriage room thirteen feet by nineteen feet, which has large double doors in front that will admit the largest size carriage, a wide single door to the horse stable, and a stairway leading to the upper floor, which is for the storage of hay, feed, etc., and a man's room if it is desired.

This barn contains two single stalls and a box stall. Each stall has a direct window, which is high enough from the floor to avoid too much draft on the horses and it protected by a wire mesh guard.

This barn has been designed for utility and is practical in every way. The arrangement is convenient, and it is of a neat appearance on the outside. If painted a stone grey, with all trimmings and cornice work painted pure white, it would be a credit to any neighborhood.

The carriage room has a cement floor, which is slightly pitched from all directions down to the center, where it is pro-

vided with a floor drain. This will admit the carriages to be washed any place in the room without injury to the floor or with hot tar. The upper floor is then laid and has slightly beveled edges, so that when laid the boards will fit tightly together at the bottom and leaving about an



the side walls which are wainscoted with Portland cement to a height of two feet six inches.

All the walls of the first story and ceiling are finished with clear southern yellow pine, beaded ceiling, with two coats of hard oil. This makes a very pretty effect for a stable and it is at the same time very serviceable. The stall floors are of double thickness one and three-quarter inch floors. The first floor is tongued and grooved, tightly laid, and then covered eighth of an inch crack on the top surface, which is then filled with hot tar. This construction makes a very durable and sanitary floor. The entire stall floor is pitched slightly to the rear to a cast iron gutter with perforated cover and connected with the catch basin and sewer. The second floor has ample storage room for a winter's supply of hay and feed for three horses and is of strong construction. The roof is of shingles and the ventilator gives the building a complete appearance.

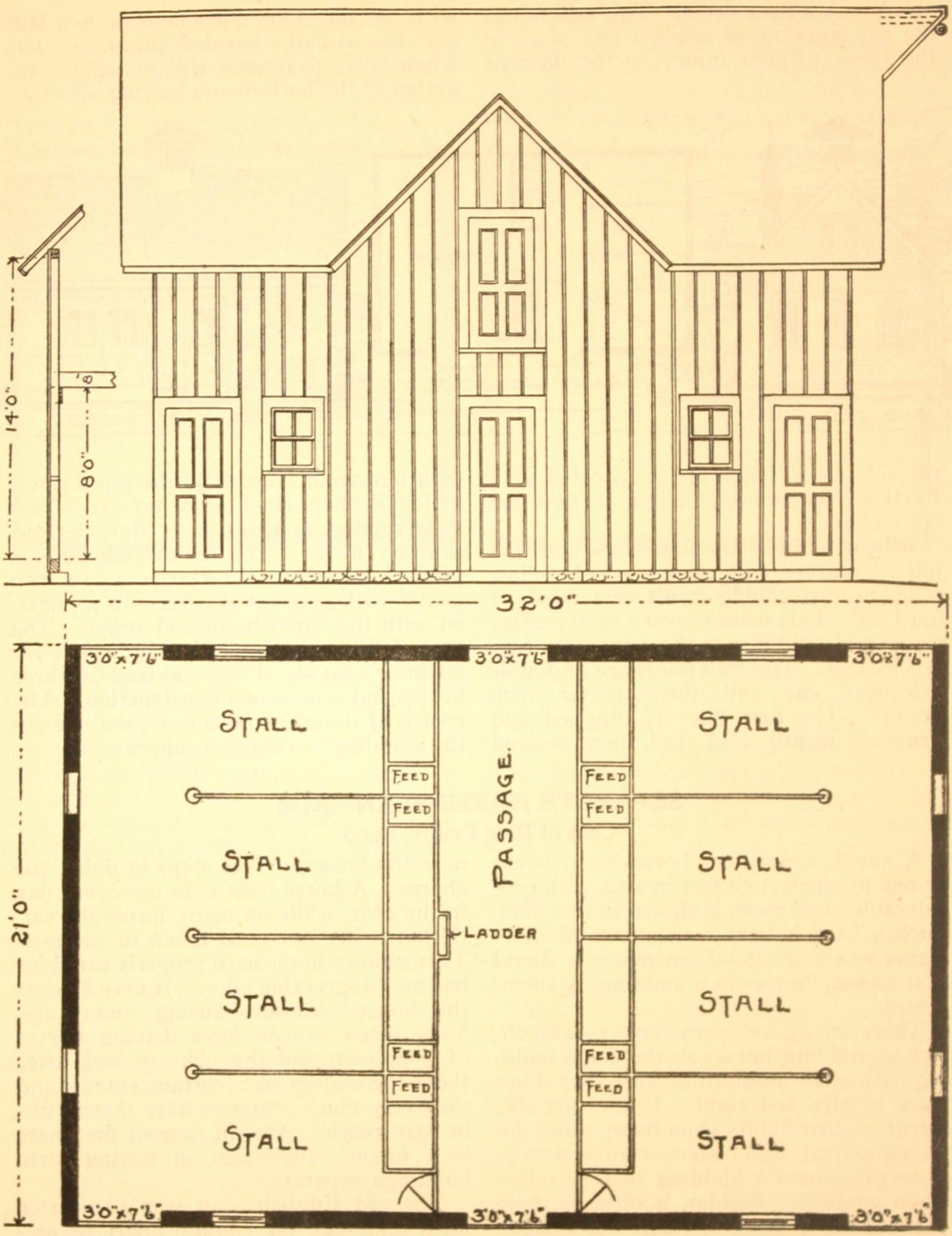
SEPARATE HORSE BARN—A129

Cost of Blue Prints, $5.00

A small, convenient horse barn, twenty-one by thirty-two feet in size, with considerable mow room is shown in this plan. Such a barn is very convenient on some farms where for good reasons it is found best to keep horses in a building by themselves.

There are a good many farmers who object to stabling horses in the same building with other animals, because they don't seem to mix just right. Horses are different in their habits from many other domestic animals and it seems right and proper to give them a building to themselves when possible. Besides, it often is more convenient to have a small horse barn near the house to save steps in doing the chores. A horse barn is in use every day in the year, while on many farms the cattle barns are not used much in summer. Then again a horse barn properly cared for has no disagreeable odor. It may be near the house without causing annoyance. Very often women have driving horses of their own and they like to look after them themselves to a certain extent, and they very much prefer to have them within easy reach. Also in case of fire there is a further advantage in having farm buildings separate.

The old English plan was to scatter farm buildings far enough apart to pre-


14'0"
8'0"
32'0"
21'0"
3'0"x7'6"
3'0"x7'6"
3'0"x7'6"
STALL
STALL
STALL
STALL
FEED
FEED
FEED
FEED
FEED
FEED
PASSAGE.
LADDER
STALL
STALL
STALL
STALL
3'0"x7'6"
3'0"x7'6"
3'0"x7'6"

FLOOR PLAN.

vent a general conflagration in case one should take fire, but farm labor is less expensive in England and everybody knows that it costs more to care for animals housed in separate buildings because of the running back and forth and because you haven't a great big storage room all under one roof where feed may be hoisted by horse power and returned to the feeding floor by gravity.

In building a little horse barn like this it is better to put down good foundation walls reaching below frost. By making the passageway floor about three inches higher than the floor behind the horses an incline will be provided sufficient to keep the feed room floor dry as well as to give the necessary drainage slope to the standing floor for the horses.

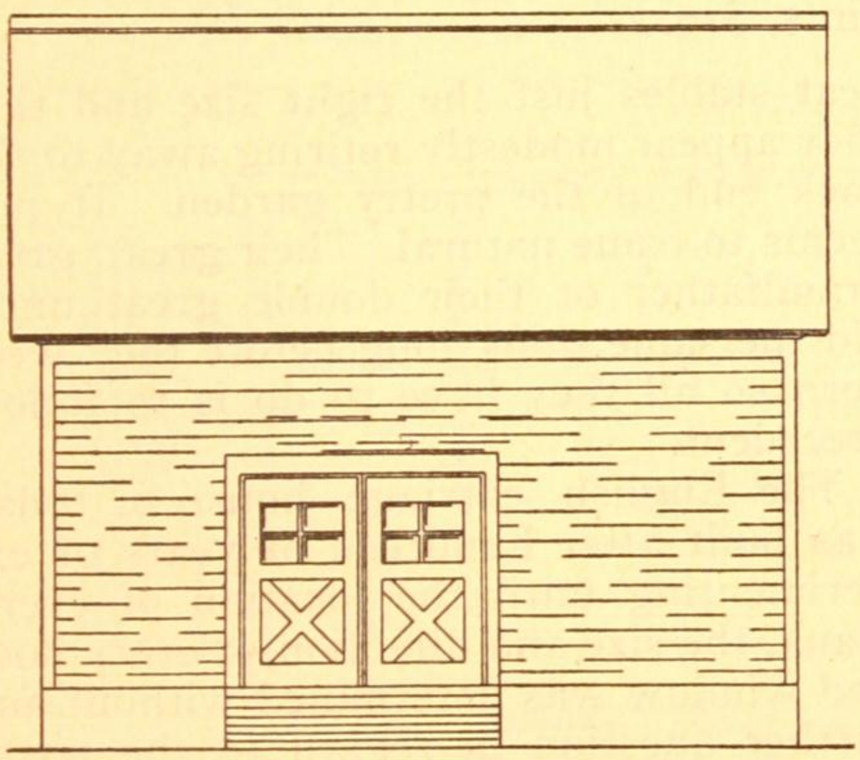
Most horsemen prefer to floor the horse stalls with planks, whether the bottom is cemented or not. This may be done before the partitions are put in, but it is better to plank each stall separately. In either case select planks two inches thick with tongue and groove matching and lay them with coal tar between. Give the floor a slight incline, say two inches fall in a distance of eight feet.

It is much better in a barn of this size, built for this purpose, to cover the whole bottom with a cement floor, cementing tight up against the walls all round and leaving a slight depression behind the horses; a sort of rounded open drain not more than an inch deep and slope the drain to the manure door so it is easy to wash the stalls and sweep the water out doors. A horse stable after this order will be found very convenient on any farm whether other buildings are calculated for horse stabling or not.

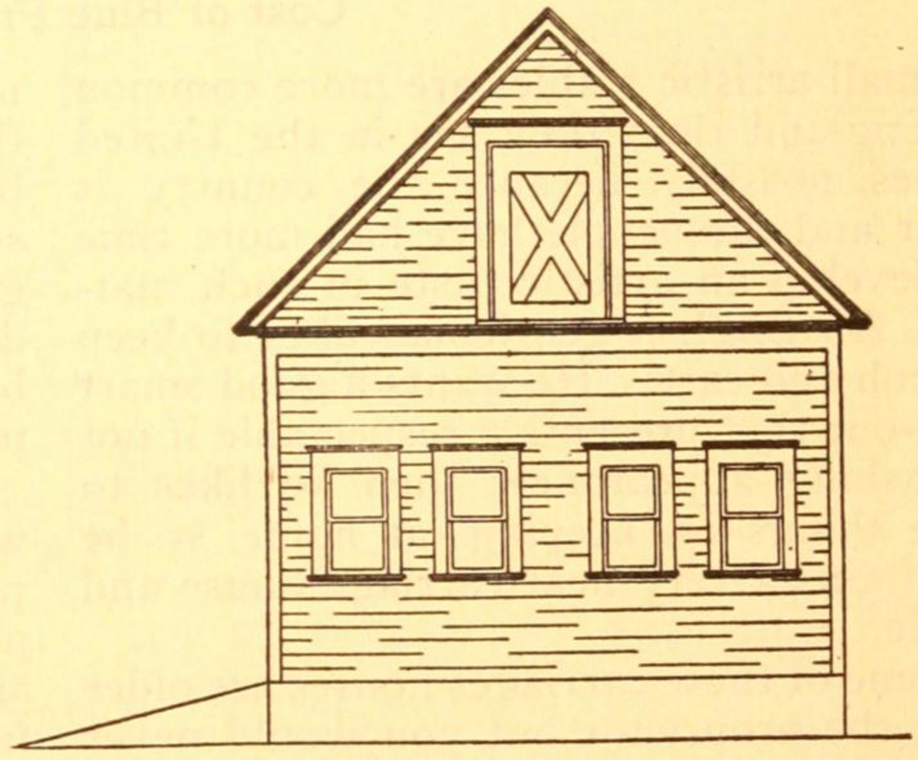
LITTLE VILLAGE STABLE—A135

Cost of Blue Prints, $5.00

The little barn, eighteen by twenty-four feet, as shown in the plans and elevations is a very satisfactory design and can be used in either village or city. It is not expensive, in fact, it is probably as cheap as any satisfactory structure could be. It is better not to take up room in such a small barn in building a stairway, as the upright ladder placed against one of the partitions answers the purpose very well. To keep the cold from blowing down through the opening a light door with a pulley, cord and counter weight may be made to shut over the opening.



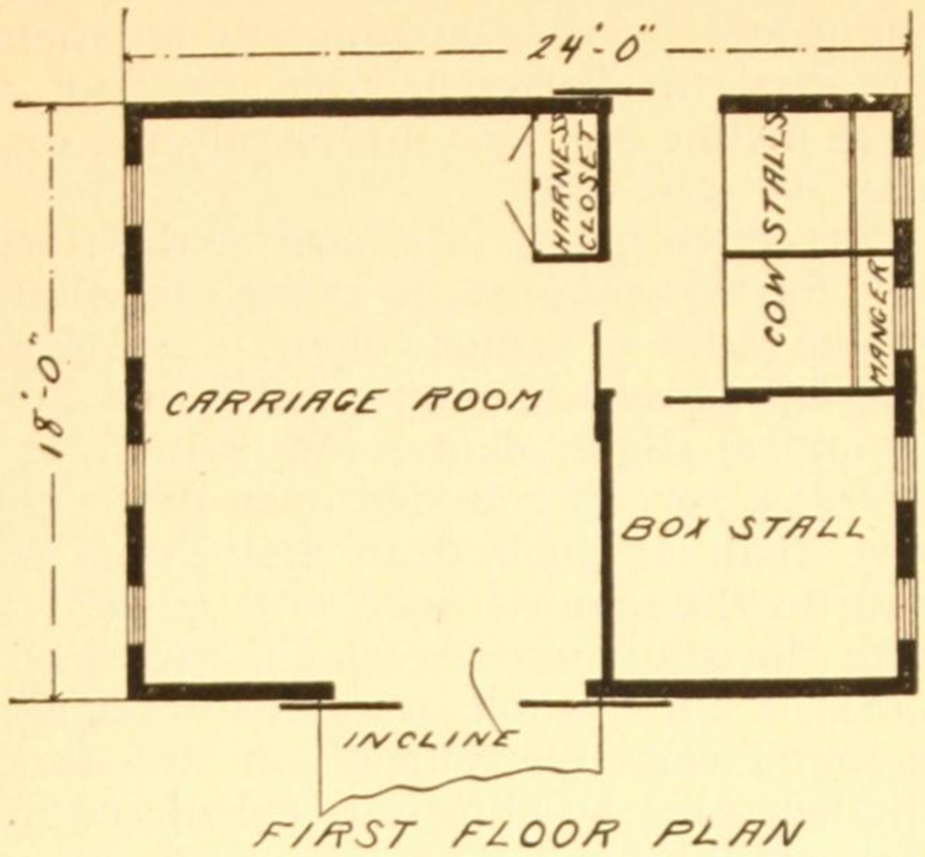
FRONT ELEVATION



SIDE ELEVATION

If there is a boy in the family he will find a way to rig up a workbench in the front corner of the carriage room between the door and the first window. It

is easy to encourage boys to work with tools, especially since the graded schools have taken up manual training. The



FIRST FLOOR PLAN

schools have added tone to the work, boys don't consider it labor now, it is part of their education and it is an important part, too. Truth may be taught in a more thorough manner through mechanics than by any other means. The principle of learning a thing by doing it is just as valuable now as it was in Froebel's time.

As a general thing a boy's work with tools is not very valuable when judged from a mechanical standpoint or from the amount of money that the finished product would bring, but it very often has a great educational value to the boy that is little appreciated by the older members of the family. The fundamental principles of mechanics permeate all nature. Animals are built on the best mechanical principles. There is a very close connection between mechanics and nature. Mechanics point the way to the connecting link between natural phenomena and commercial success. Mechanics and mathematics also are very closely related, but the natural live boy loves the one and hates the other. No woman wants a boy tinkering in the house, but he can spend many happy hours in the barn without disturbing anyone.

ENGLISH CARRIAGE HOUSE—A99

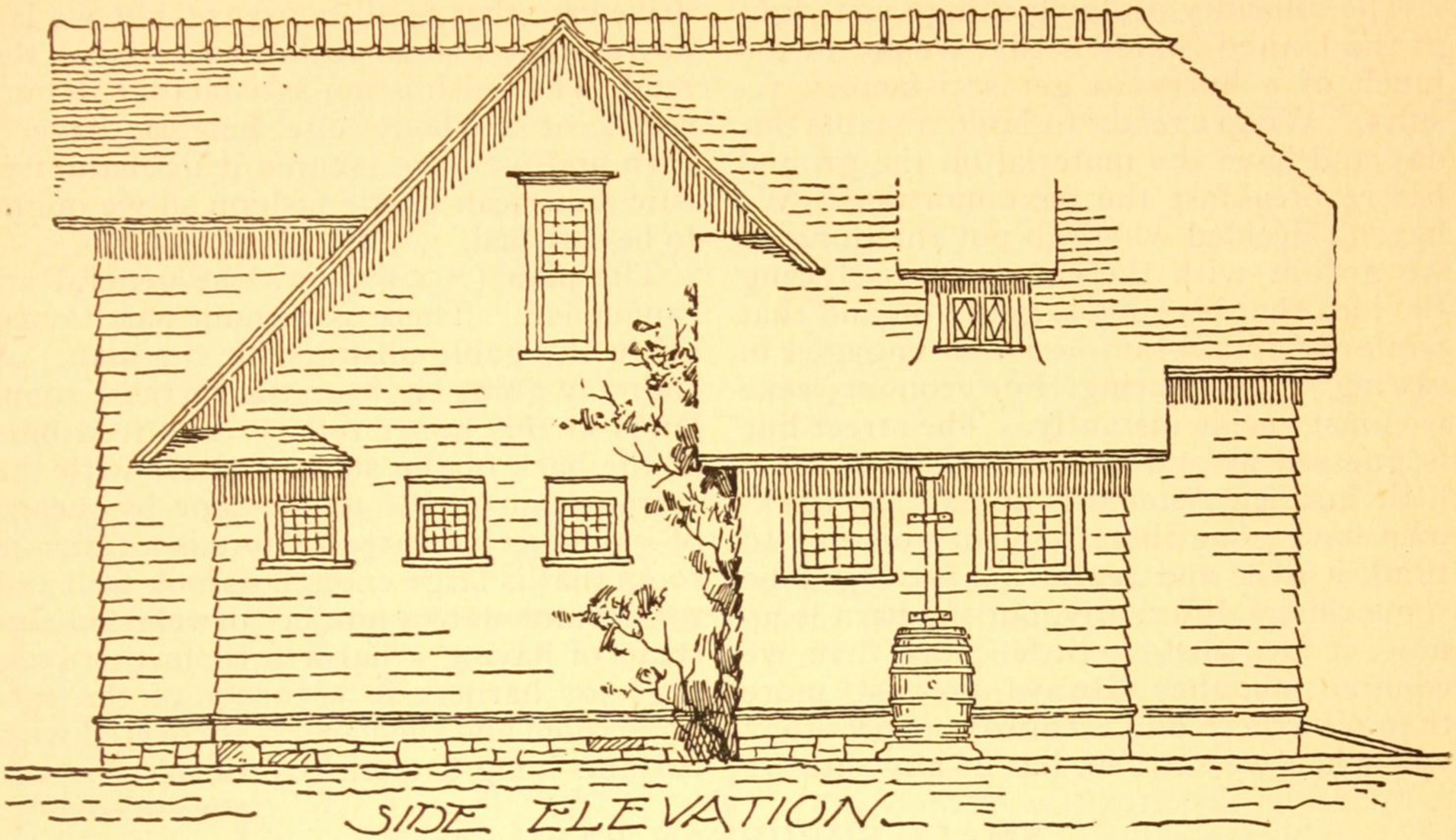
Cost of Blue Prints, $10.00

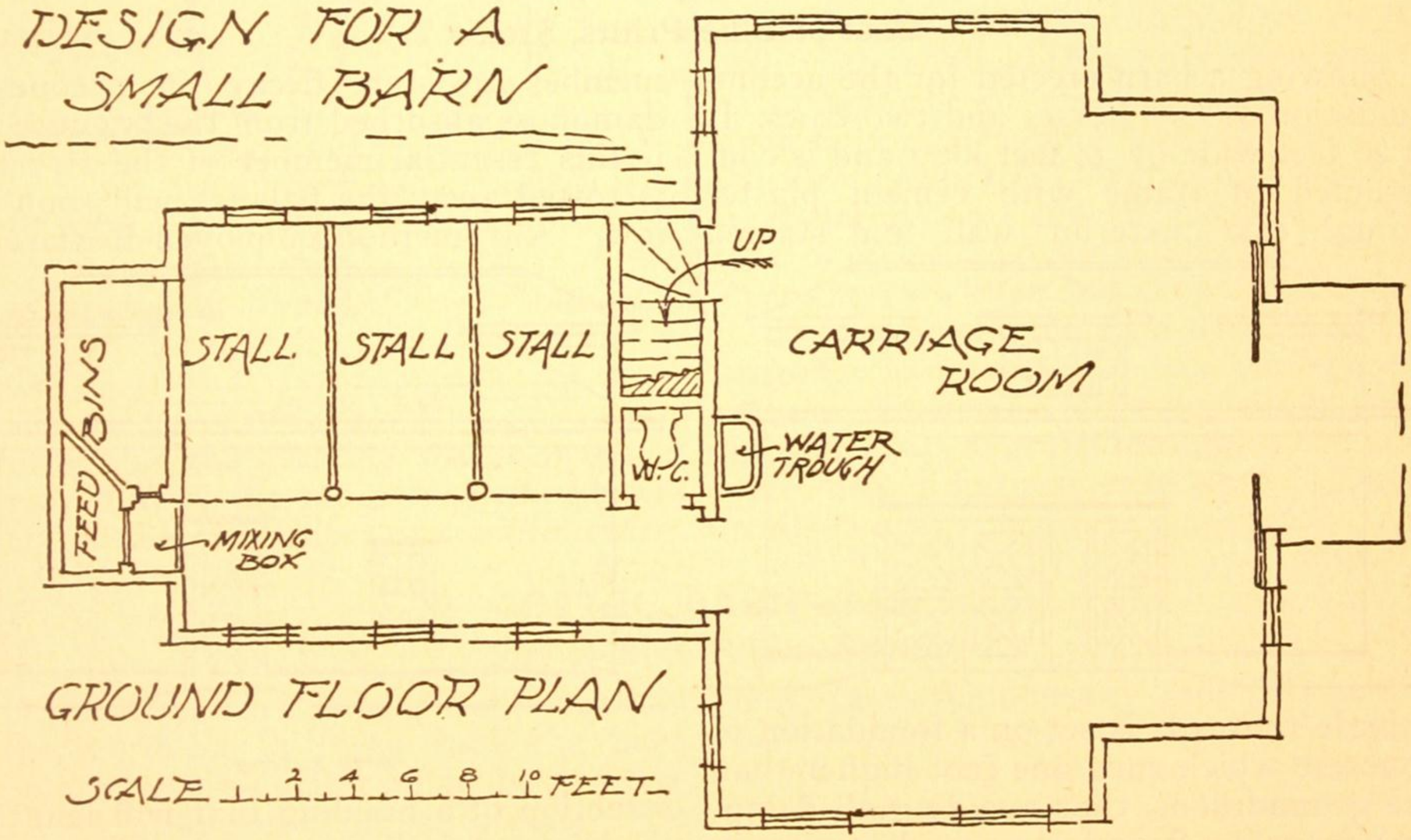
Small artistic stables are more common in England than they are in the United States, possbily because the country is older and the people have had more time to develop an artistic taste in such matters. An English gentleman likes to keep his cob and cart. He wants a good smart turn-out that presents a respectable if not a dashing appearance; then he likes to have things in keeping at home, so he maintains a very neat carriage house and stable.

Some ot these carriages houses are older than the proprietor but you would never know it to look at them. They are kept in such repair and they nestle amongst the hedges and trees in such a pretty homelike way that you never think about their age or intrinsic value. You get the impression at once that they are proper and proper goes a long way in England. You don't wonder that they have very neat stables just the right size and that they appear modestly retiring away to the back end of the pretty garden. It just seems to come natural. Their great, great grandfather or their double great uncle did the same thing long before they were born so all they have to do is to follow precedent.

The English carriage house of today was built after hundreds of years of experimenting until the location of every plank, the size and direction of every door and window was determined without any further question in regard to the possibility of the slightest improvement. It is put back on the lot in the furtherest corner from the house. The approach to it is through an arched or pillored opening in a beautifully well kept hedge. The driveway is not straight. English gardeners keep just as far away from straight lines as they possibly can. Somebody discov-

ered in the time of King Alfred that curved paths and roadways in gardens were proper. Some of the old enthusiasts went a step too far and got them crooked. This was frowned on for a century or two until succeeding generations pulled some of the kinks out by injecting a few liberal doses of English conservatism so that now after a good many generations the driveway from the lane through the back of the lot to the stable is gently curved. The stable also is partially screened from





view by hedges, vines and trees: This is proper in England, it is good sense in any other country.

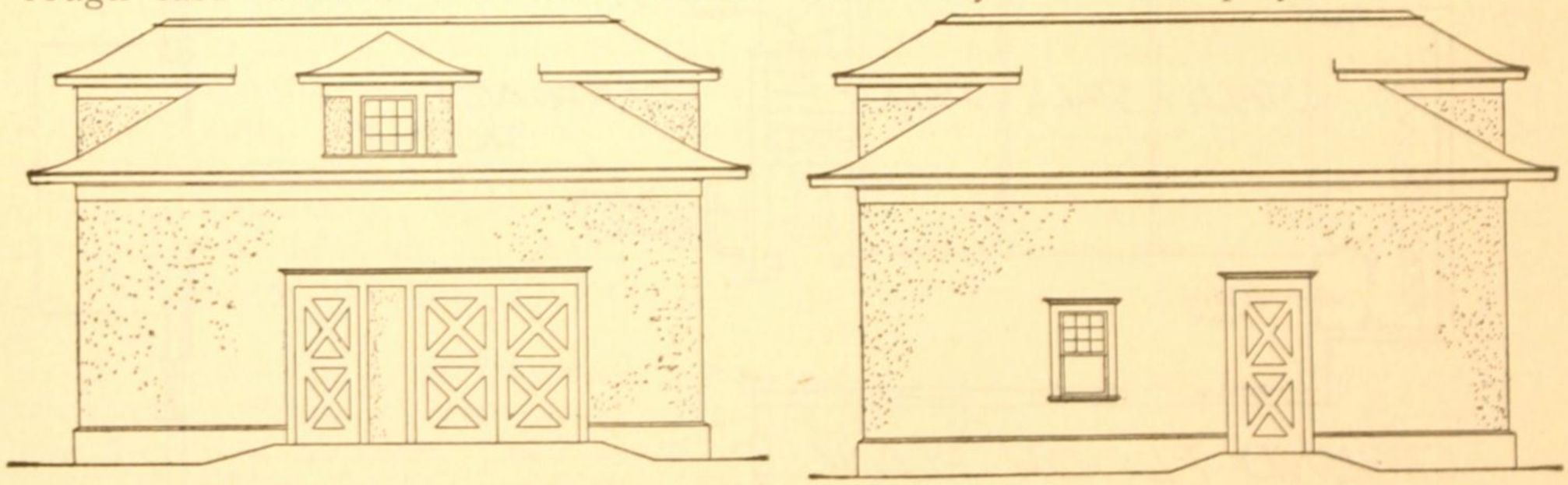
The difficulty of doing things just right in the United States is that we are in too much of a hurry to get satisfactory results. We get ready to build a stable one day and have the material on the ground before breakfast the next morning. We haven't decided where to put the thing so we go out with the carpenter harboring the idea that his time is going on and that while we detain him he is not engaged in sawing or hammering. For economy sake we must decide instantly. The street line is guessed at and the barn placed just a little inside. After it is up and the workmen have gone there is plenty of time to think it over and regret not having done some things differently, but the barn is up now, it has cost a little more than we counted on, they always do cost more than we expect, and we always expect they will when we start in, but at any rate we haven't any time or money now to change things or even level off the ground properly. We haven't figured on a curved driveway, that is all nonsense, but we lay down some planks to keep us out of the mud. The finish is not satisfactory to ourselves or anybody else, but we have a barn and we have secured it in characteristic American hustle fashion so we ought to be satisfied.

The plan (A99) shows the general arrangement. There is a room partitioned off in the gable upstairs for the man. A stairway going up from the carriage room lands in this upper room. The feed bins at the back of the stalls connect with the storage bin on the upper floor by means of spouts as indicated. There is a carriage room that is large enough to look well and to accommodate a number of vehicles. Instead of having a harness room there are pegs for harness in a corner of the carriage room and the harness is covered with curtains hung to a wire overhead.

SMALL SUBURBAN BARN—A215

Cost of Blue Prints, $10.00

Showing a barn erected for the accommodation of two horses and two cows. It is 26 feet wide by 34 feet long and is constructed of frame with cement plaster "rough cast" exterior wall and stained



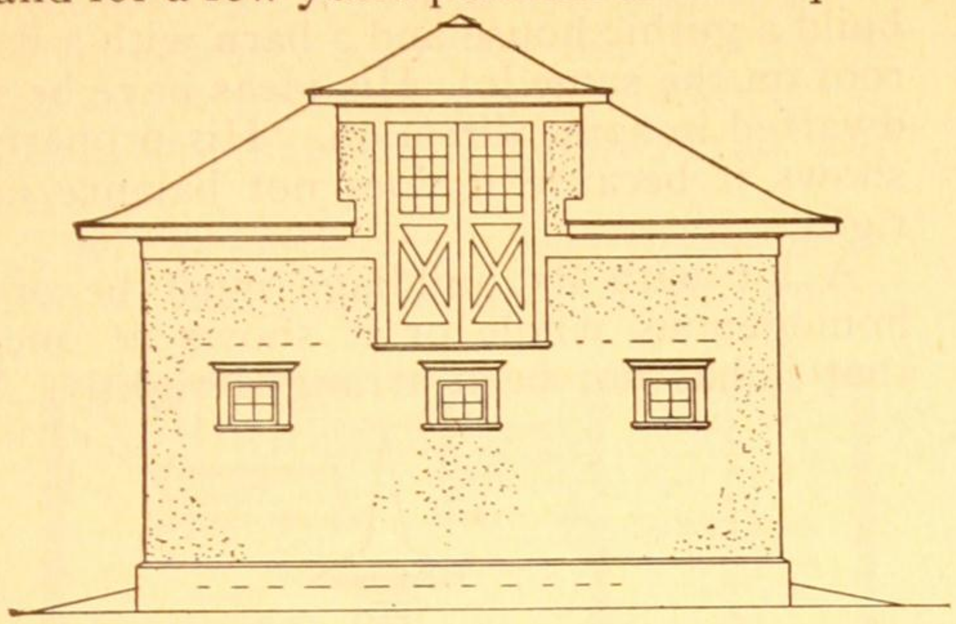
NORTH ELEVATION

shingle roof. It is set on a foundation of concrete which runs one foot higher than the ground floor, thus avoiding all dampness from the floor and ground coming in contact with the wood construction, which would otherwise soon decay.

The sill of a barn is always the first member to start decay on account of dampness absorbed from the ground, and if this essential member of the structure is rotted away the balance will soon follow. Any method employed in the construction of a building that will lengthen the life of the sills is worth looking into.

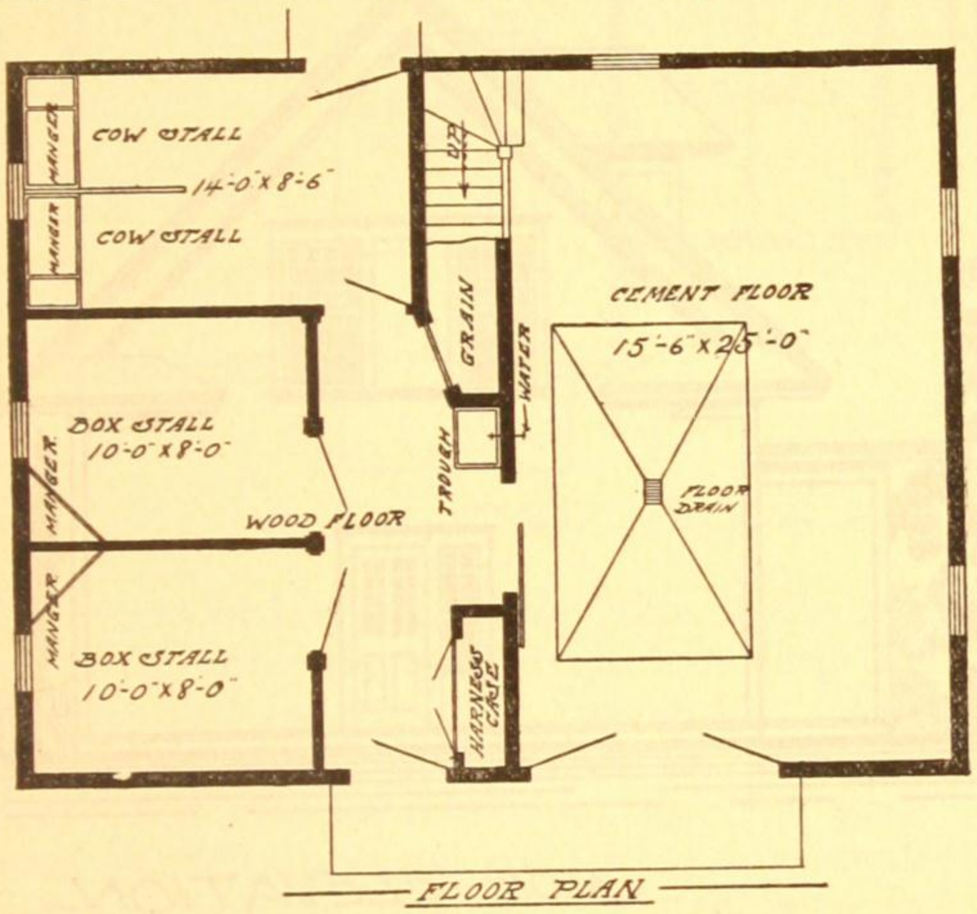
The roof of a building is justly considered the most important part; a building can be built without much of a foundation

by setting it on posts or masonry piers, and for a few years perform all its require-



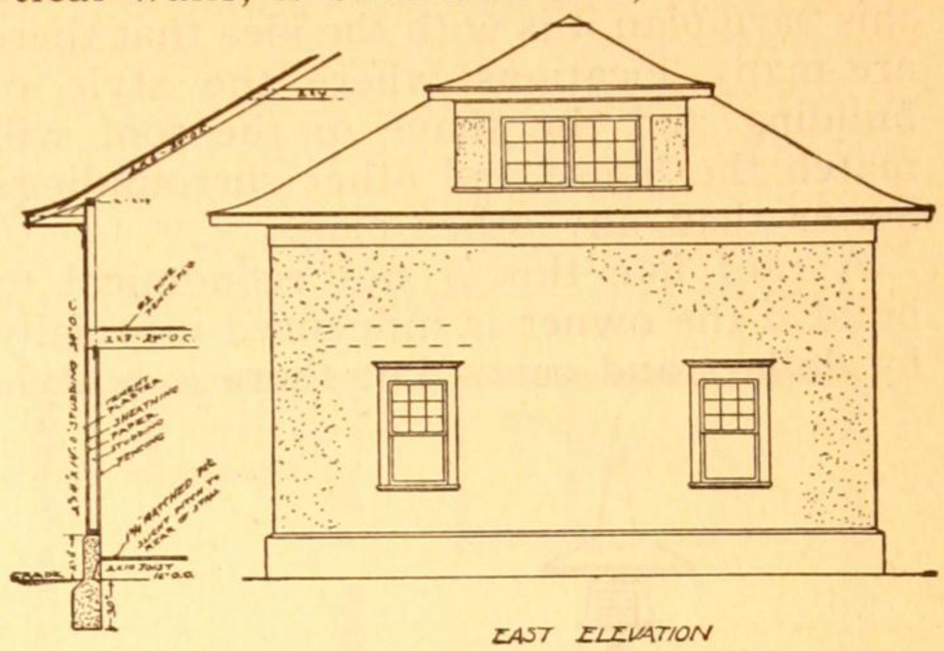
WEST ELEVATION

ments, but the roof can never be omitted; and like the sill, it must be kept in good



FLOOR PLAN

condition or the building will soon go to ruin. One of the most important parts of the roof is the gutter or cornice which, if made without projection beyond the vertical walls, is of little value, as it will al-



EAST ELEVATION

low the rain to run down the sides of the building and soon make the walls look weather worn and streaky from the dust which is washed down the walls with the rain. A well built cornice with a good projection not only avoids this trouble, but also protects the walls from the hot summer sun as well as giving architectural grace to the design.

The outside walls of this building are constructed of 2 inch by 4 inch studding, 16 inches on centers, sheathed on the outside with matched sheathing, then covered with waterproof building paper; then 1 inch by 2 inch furring strips placed 16 inches on centers (or over each studding); then lathed and cement plastered. This not only makes a very durable wall, but is warm in winter and cool in summer.

The carriage room and cow stalls have cement floors and the box stalls are of plank. There is a large hay room on the second floor, a grain bin under the stairway, and a harness case near the horse stalls.

GOTHIC BARN—A181

Cost of Blue Prints, $10.00

If the horse barn is near the house and if the house has a steep roof the barn should have a similar roof to be in keeping. We often see a house of one style and the other buildings nearby built on entirely different lines. If the house is new and the other buildings old there is some excuse for such incongruity, but in most cases the house is built first and the barn is added to the lot some years afterwards. In the meantime some architectural fad has taken possession of the neighborhood and every building erected must bear the marks of the new fashion.

There is too little originality in building. It is much easier to follow the local

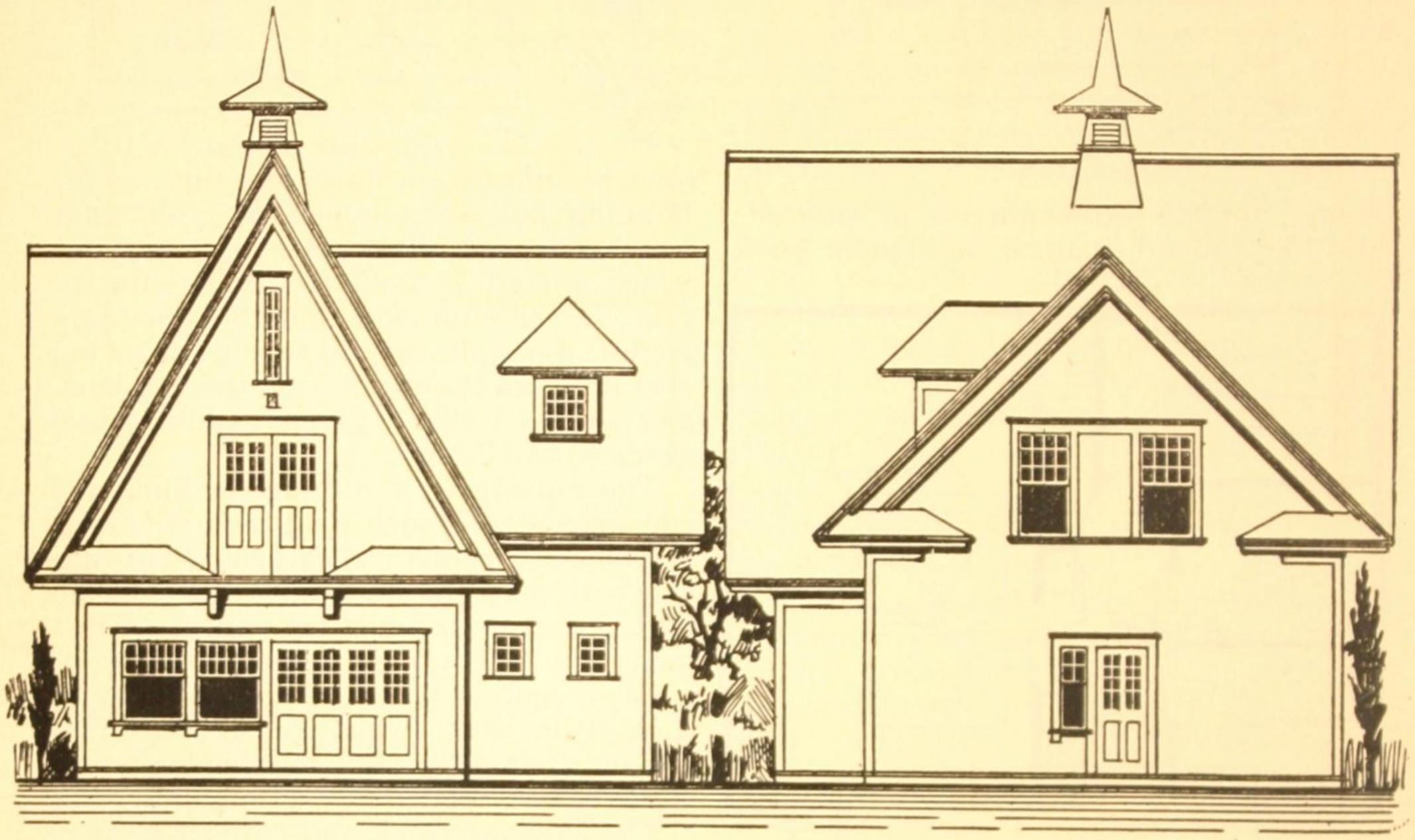
trend than it is to hunt out a plan that is suitable for individual needs. In offering this barn plan it is with the idea that there are many locations where the style of building and the shape of the roof will match the house and other surroundings better than any other plan.

A roof like this is not economical to build if the owner is influenced especially by dollars and cents, but there is a style about it that shows up well for the amount of money it costs. There is a great deal in appearance. When we have things right we have something to appreciate for a long time to come. If the house has a steep roof we cannot tolerate a barn with a main roof that is, say one-third pitch and a lean-to that is even less.

If the mischief has been done conditions may be somewhat improved by moving the barn back well out of the way and having it covered with vines or screened in some way so it is not obtrusive. But there is something wrong with a man who will build a gothic house and a barn with a flat roof on the same lot. His ideas have been dwarfed in some direction. His property shows it because it does not balance up right.

A lot with its buildings must be one homogenous whole or it shows at once that it has not been arranged rightly. A village stable may be made an ornament to the property or a damage to the owner and an eyesore in the neighborhood. Neighbors often say unkind things about the owner of the barn on the next lot. Not always on account of the looks of the thing; they may be aggravated by the perfume or the noise of the chickens when they want to sleep in the morning.

A good many folks don't like neighbors and it is generally for some such reason, but neighbors are necessary and the

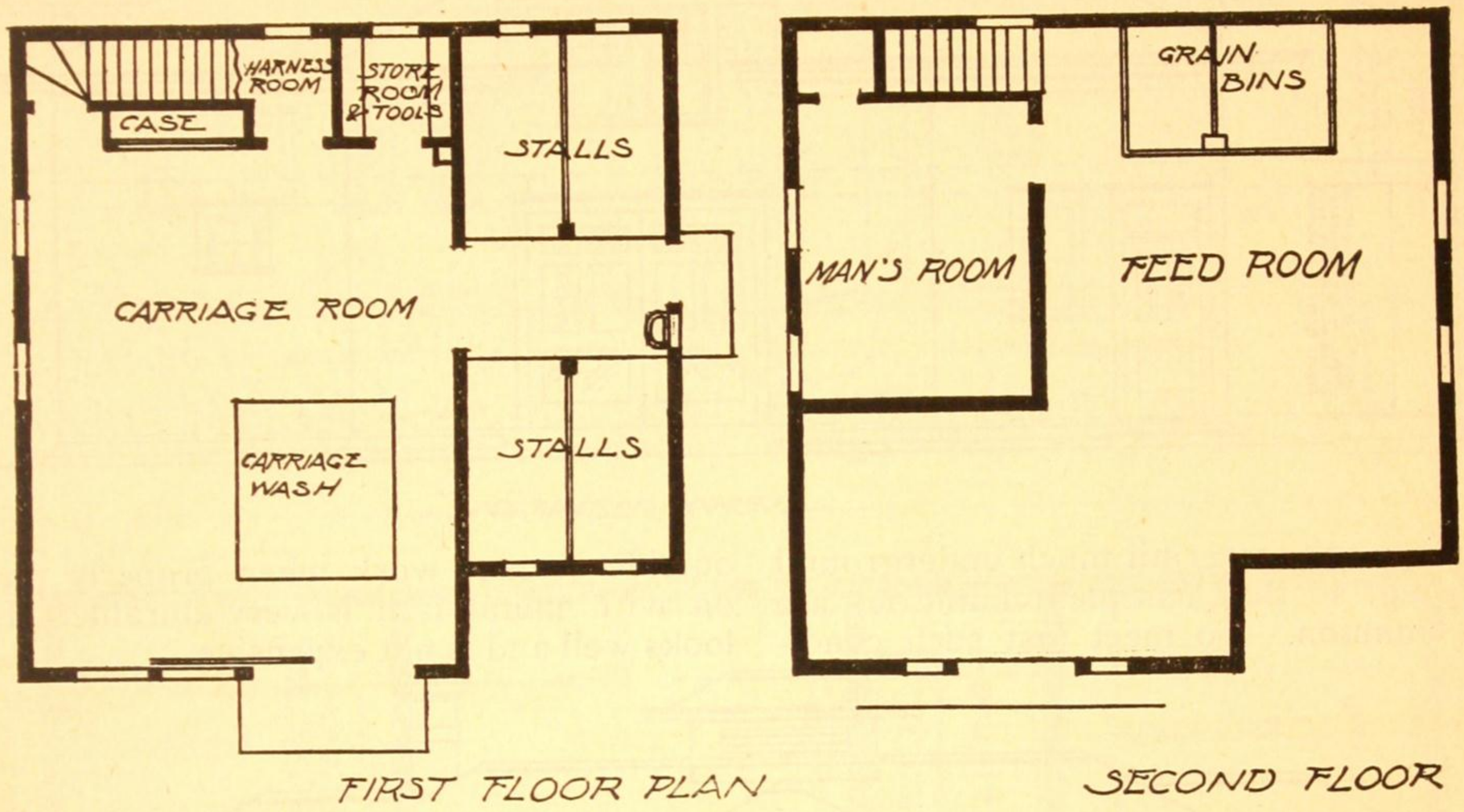


FRONT ELEVATION SIDE ELEVATION.

DESIGN FOR A SMALL BARN WITH FOUR STALLS

neighbors sometimes build barns and they don't always keep them nicely. It requires a level-headed man to lay out a lot to the best advantage and put up buildings in such a way that no one can find fault with them.

There is something about the arrangement of this barn inside that will appeal to every orderly person. The stalls are right for convenience both in handling the horses and for cleaning the stable. The carriage room is quite large and convenient with two store rooms, one for general garden tools with a place for small work bench on one side, a necessity in almost any village lot where a man is kept to do the chores. The other storeroom is intended for harness. There is also a case which comes in very handy to keep the smaller things and those that are valuable. The glass doors slide past each other and may be easily locked shut. It is a good plan to have some little cupboard like this that may be locked when occasion requires it. In almost every stable medicines are kept and they should be out of the way of children. It is a splendid precaution to keep medicine bottles locked up. A great many accidents have come just from carelessness in this respect.



FIRST FLOOR PLAN SECOND FLOOR

Every village stable that is large enough should have a room for the man; it may not be necessary at all times, but the time will probably come when this room will be found very useful. In this case it is built in one of the large gables where the roof is steep enough to lath and plaster right on the rafters. It is a case of building a roof and a side at the same time and it makes a saving in expense in one way or the other. You either don't pay for the roof or you don't pay for the side of the room.

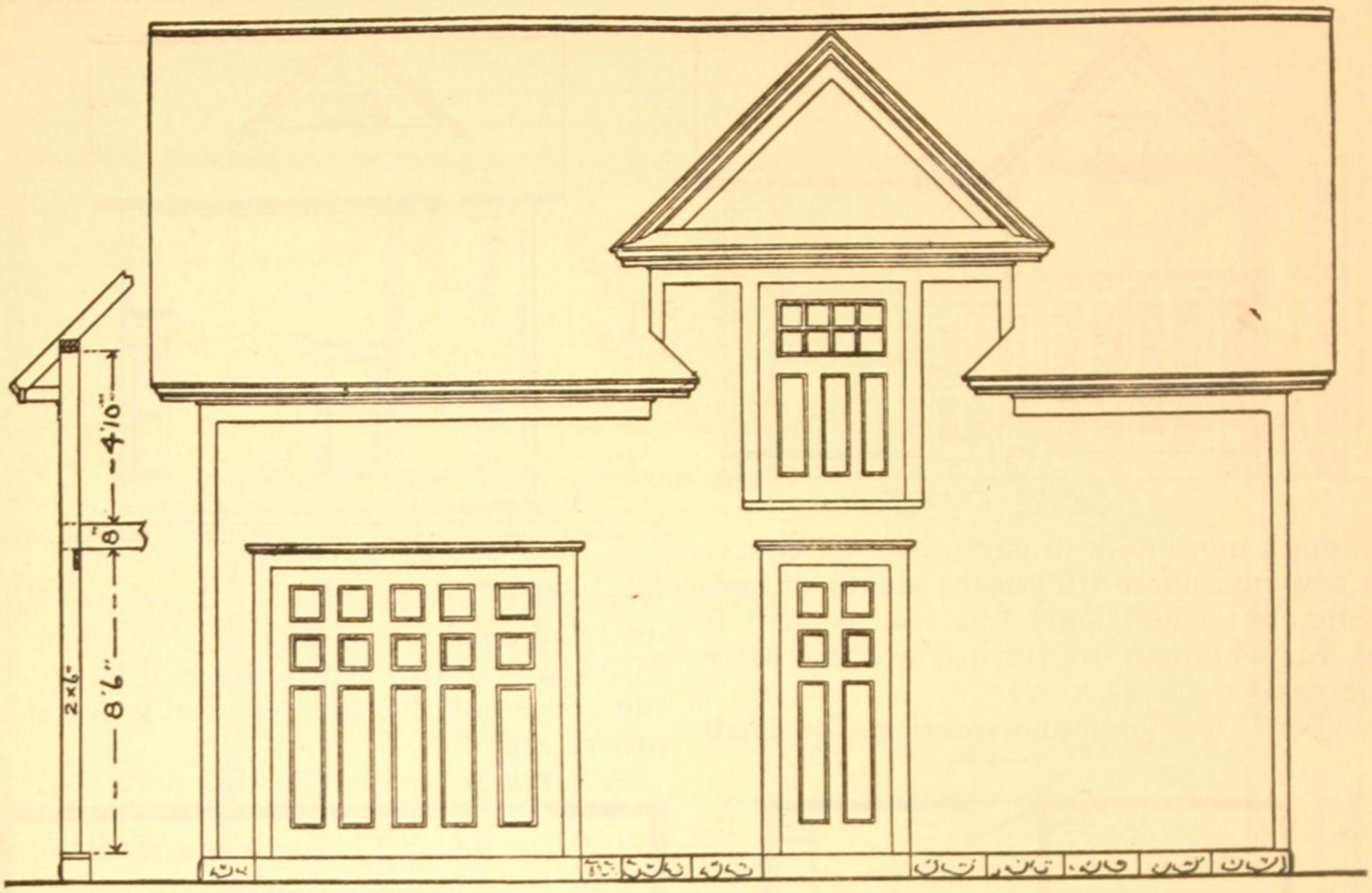
CEMENT ROUGH CAST BARN— A182

Cost of Blue Prints, $15.00

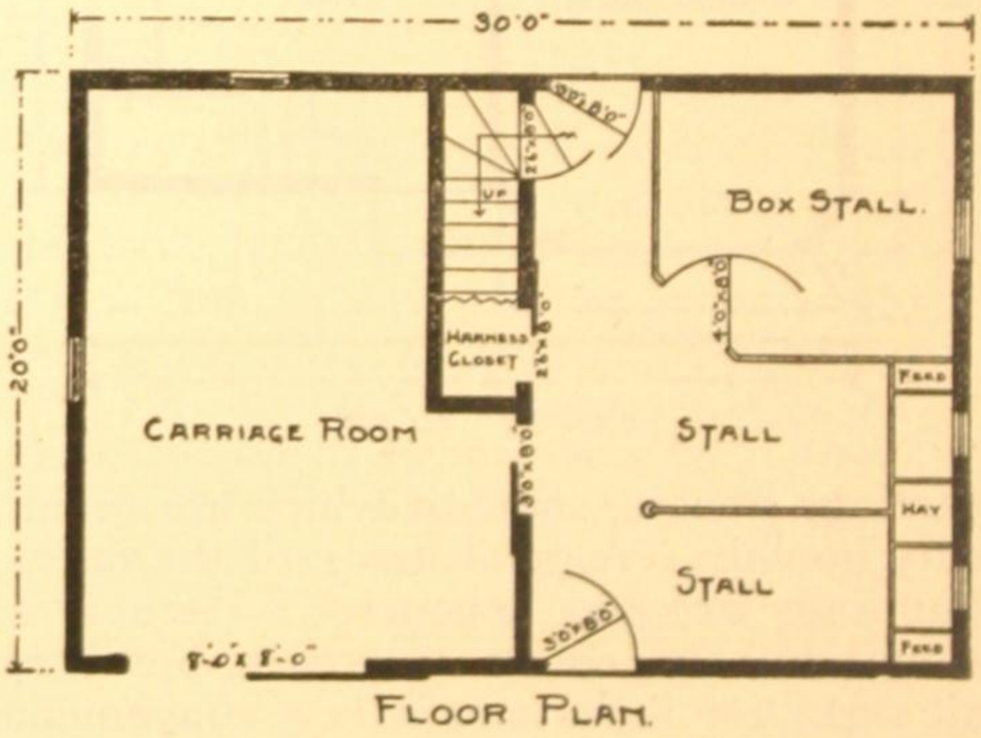
A carriage house and stable plastered on the outside with cement mortar with a rough cast finish is shown in plan (No. A182). There are locations where a basement for laundry purposes under the house is not desirable. This plan for a carriage house with a laundry attachment was designed especially to meet such cases. In

inches which is about as low as you can have a ceiling in a carriage house because you must have room enough for a top buggy. For this reason the doorway must be about the same height.

The internal arrangement of this stable is different from most small carriage houses. There is a box stall about nine feet square. It is difficult to plan a decent sized box stall in a small stable. They run into room too fast. Nothing looks so comfortable for a good horse as a roomy box stall. If the horses had their say about it there would be more box stalls, but it really requires about three times as much room to stable horses this way.



FRONT ELEVATION.

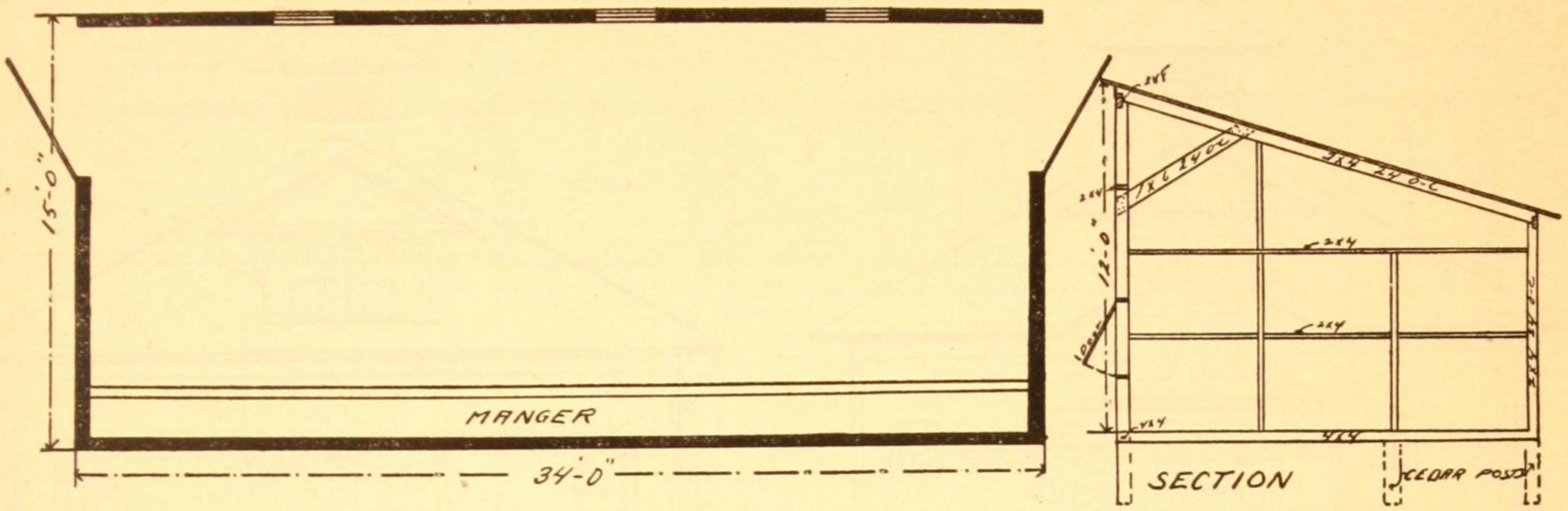


FLOOR PLAN.

HORSE SHED—A121

On farms where a number of brood mares are kept and colts of all ages coming along, it is much better to have a separate shed for winter feeding for the colts than let them run at large among the cattle. One colt might not do much damage in the general barnyard, but colts are mischievous and one teaches another.

A light shed may be built on this plan, which is fifteen by thirty-four feet, at very little expense. It should front on the stack yard and face the south if possible. For economy it is placed on cedar posts let in the ground below frost, but it should be thoroughly banked up in the fall to keep out the cold winds. In banking up a shed like this set a board all around the outside to keep the earth away from the building proper. Fit the board nicely so there are no chinks to let in the cold draft.



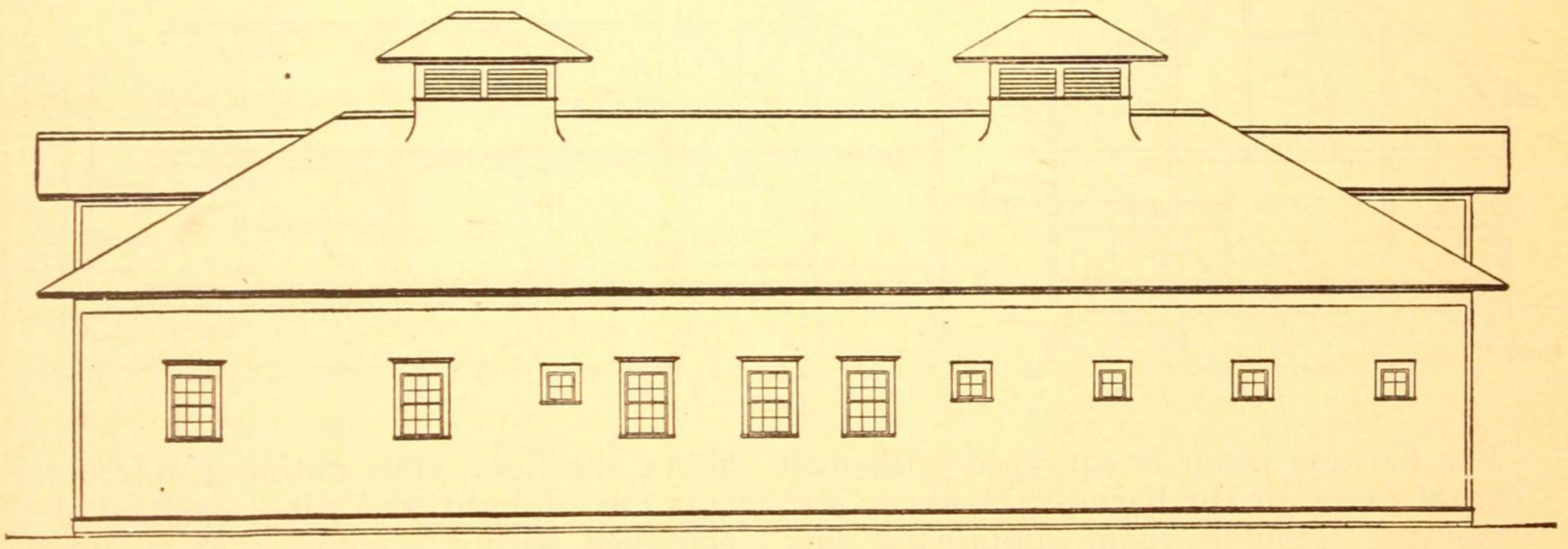
HORSE SHED

WELL PLANNED HORSE BARN— A171

Cost of Blue Prints, $10.00

To make this article more comprehensive to those interested in barn construction we show an exact reproduction of the architectural plans after which the building was erected.

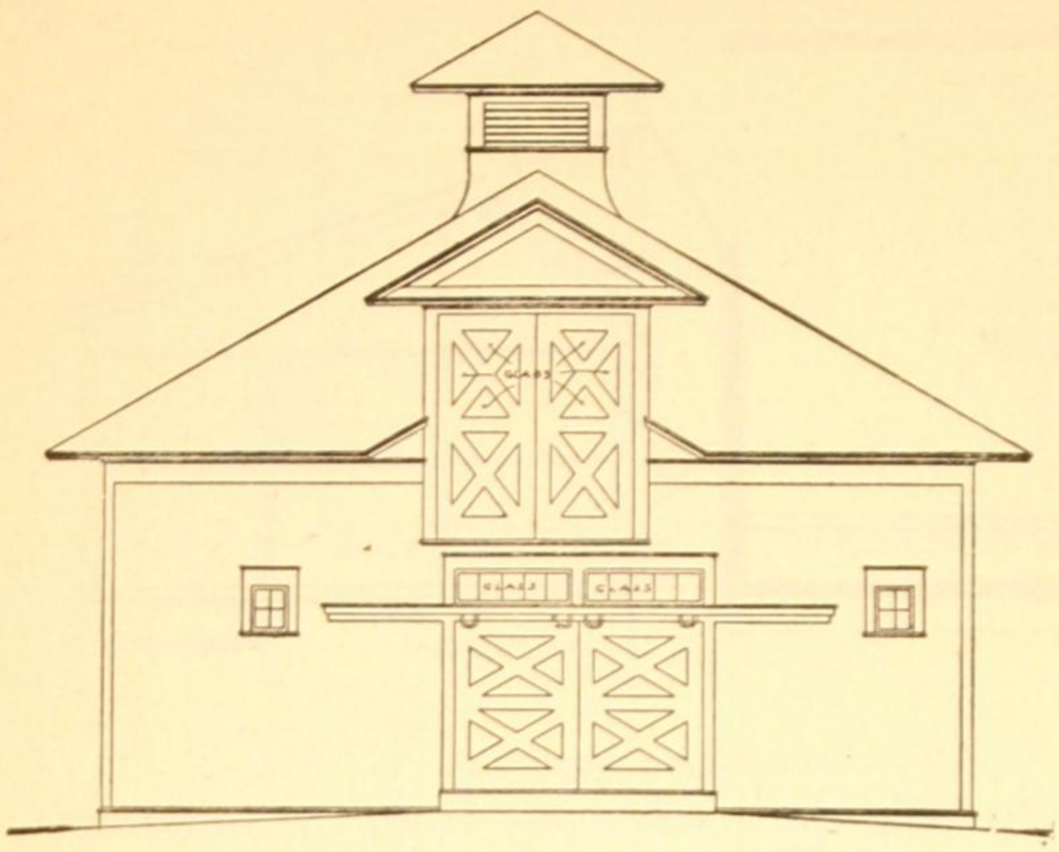
This building is designed to accommodate fourteen horses, having ten sing'e stalls and four box stalls, and all the necessary feed bins, harness room, wash room, grain room, carriage room, storage rooms,etc.

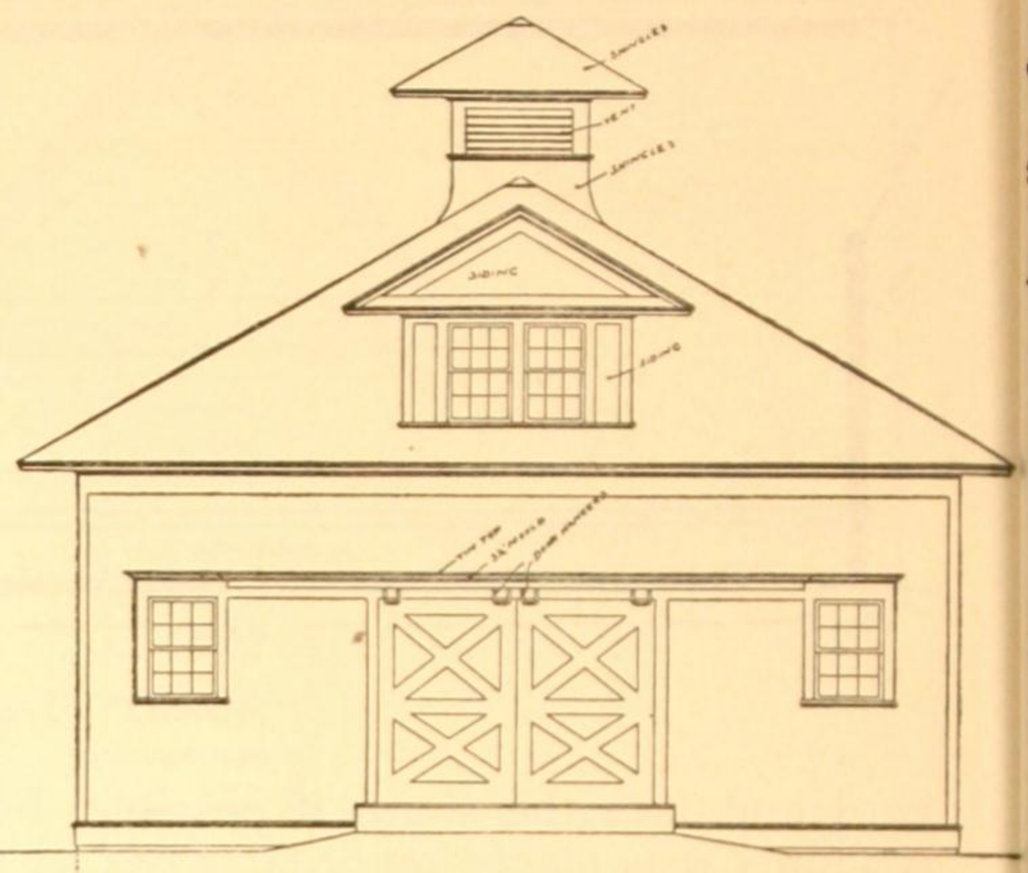


NORTH ELEVATION OF HORSE BARN

The carriage room, which is 30 by 36 feet clear span without posts, is on the east end and has an entrance of large double sliding doors, and also a large sliding door to the horse stable. The carriage

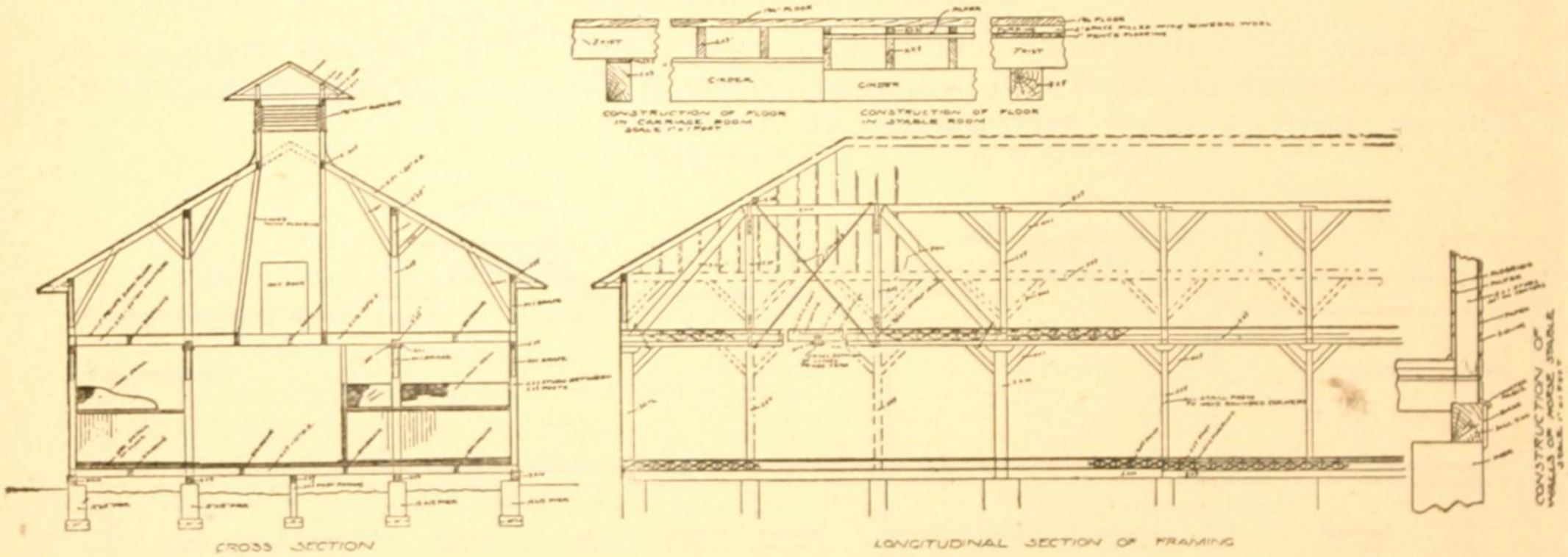
room floor contains a carriage wash near its center and overhead is a large trap door, so any vehicles which are out of use





can be hoisted up to the floor above for storage. The carriage room also has direct doors to the harness washing room.

a wire grill in the top half, and the partitions between all stalls have wire grills running up to a height of about 7 feet

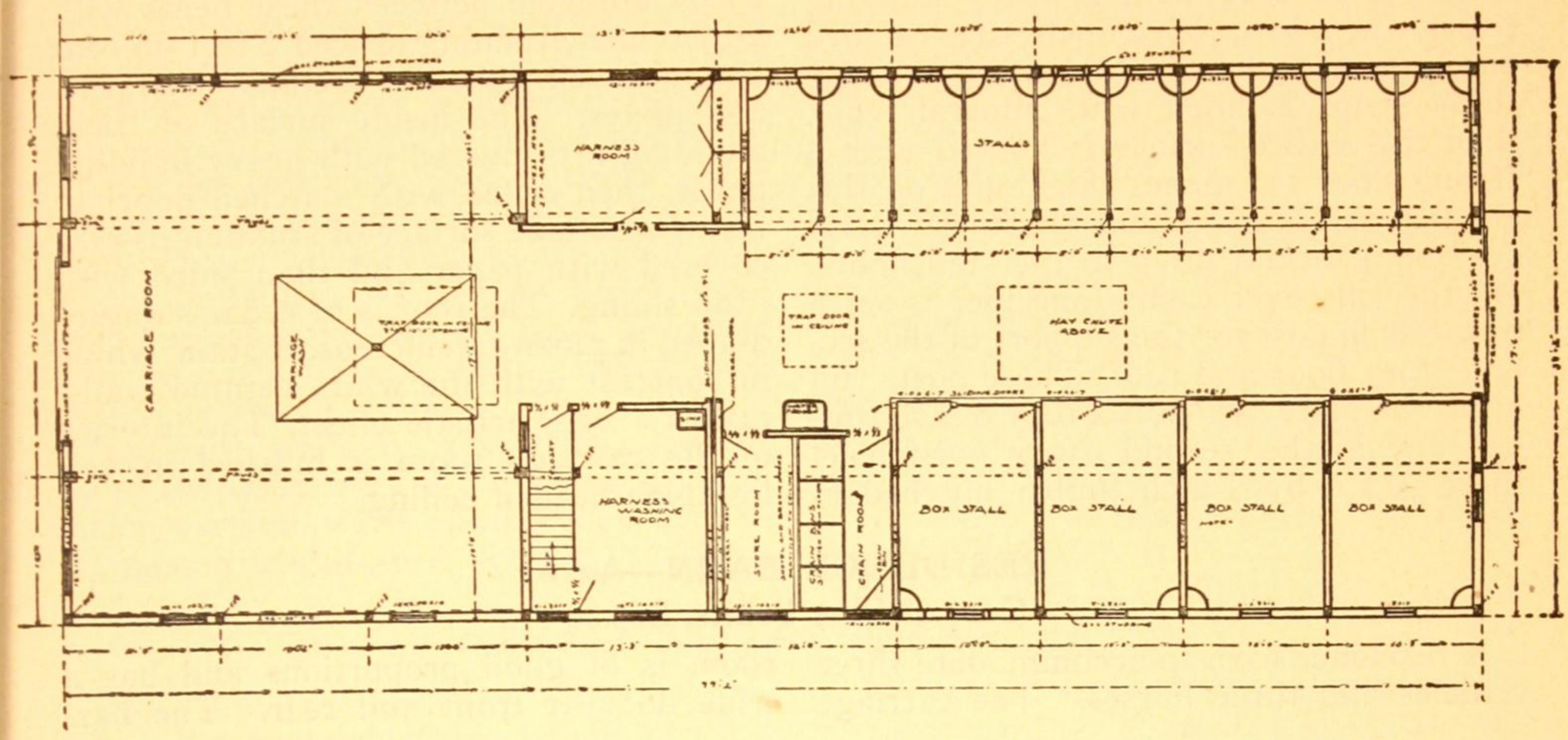


The harness room is equipped with dust proof cases for the harness, blankets, etc., and the washing room contains a sink with soft water supply and all the necessary fixtures required for the washing and repairing of the harness.

The stable room contains a watering trough, a store room for tools, shovels, etc., and a grain room for the mixing of feed, and which has small grain bins

above the floor, thus obtining a free circulation of light and air. Each stall is equipped with a window that is hinged on top and swinging out. This provides each animal with fresh air and a direct draft upon the animal is avoided by these windows being placed up near the ceiling, also being covered with a wire screen for protection. All stalls have cast iron feed boxes, salt boxes and wrought iron hay

racks connected directly with hay chutes from the hay room above. All stall floors are slightly sloped to the back and there connected with a cast iron drain trough provided with trap doors by which the flow of air can be regulated as desired, and this shaft at the same time serving for a hay and bedding chute.

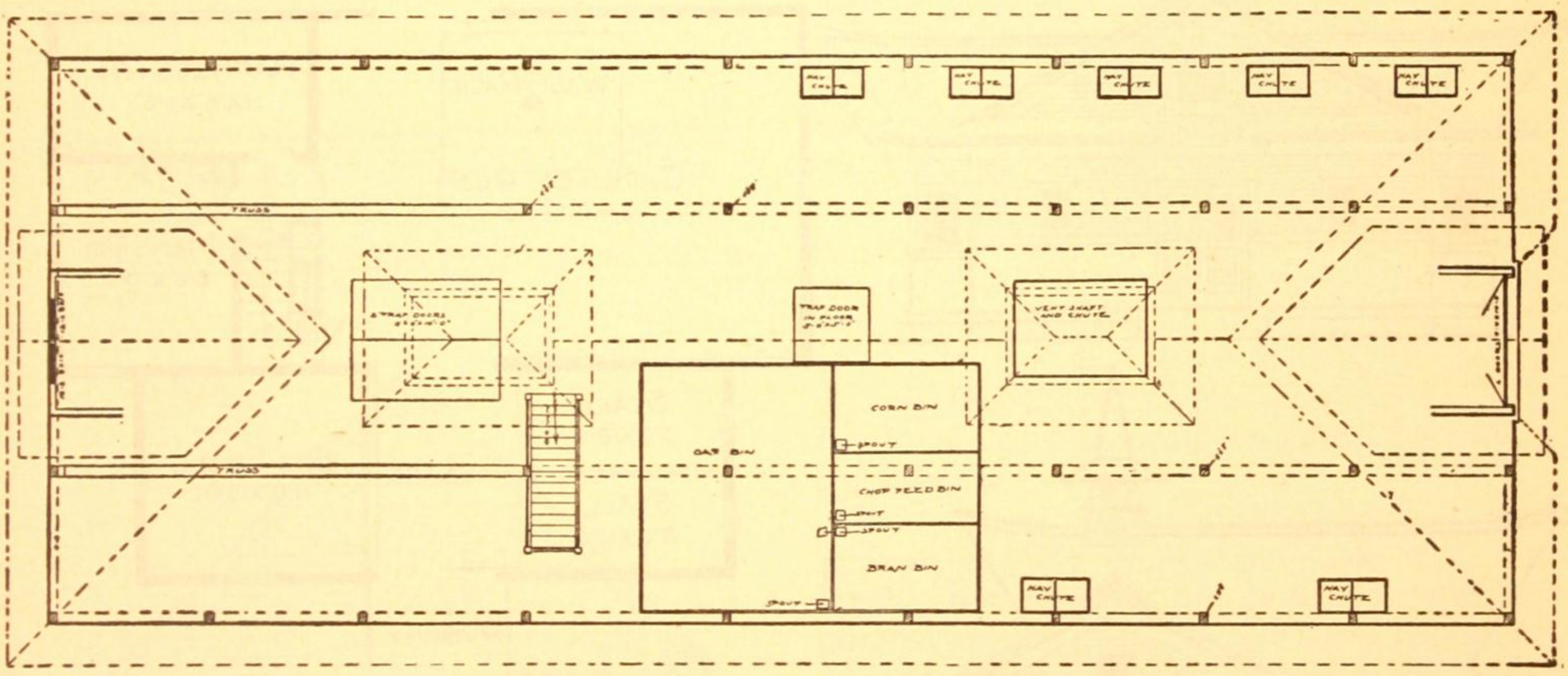


running the full length of and on each side of the driveway.

In the ceiling of this driveway is a large trap door for throwing down hay and bedding, and also for the hoisting of hay from the hay wagon in stormy weather.

One of the roof ventilators has a shaft running down to the ceiling of the horse stable for ventilation, and is at this ceiling

The second story is used for the storage of hay, bedding, grain and feed, and the room above the carriage room is partitioned off into a dust-proof room for the storage of vehicles, etc.



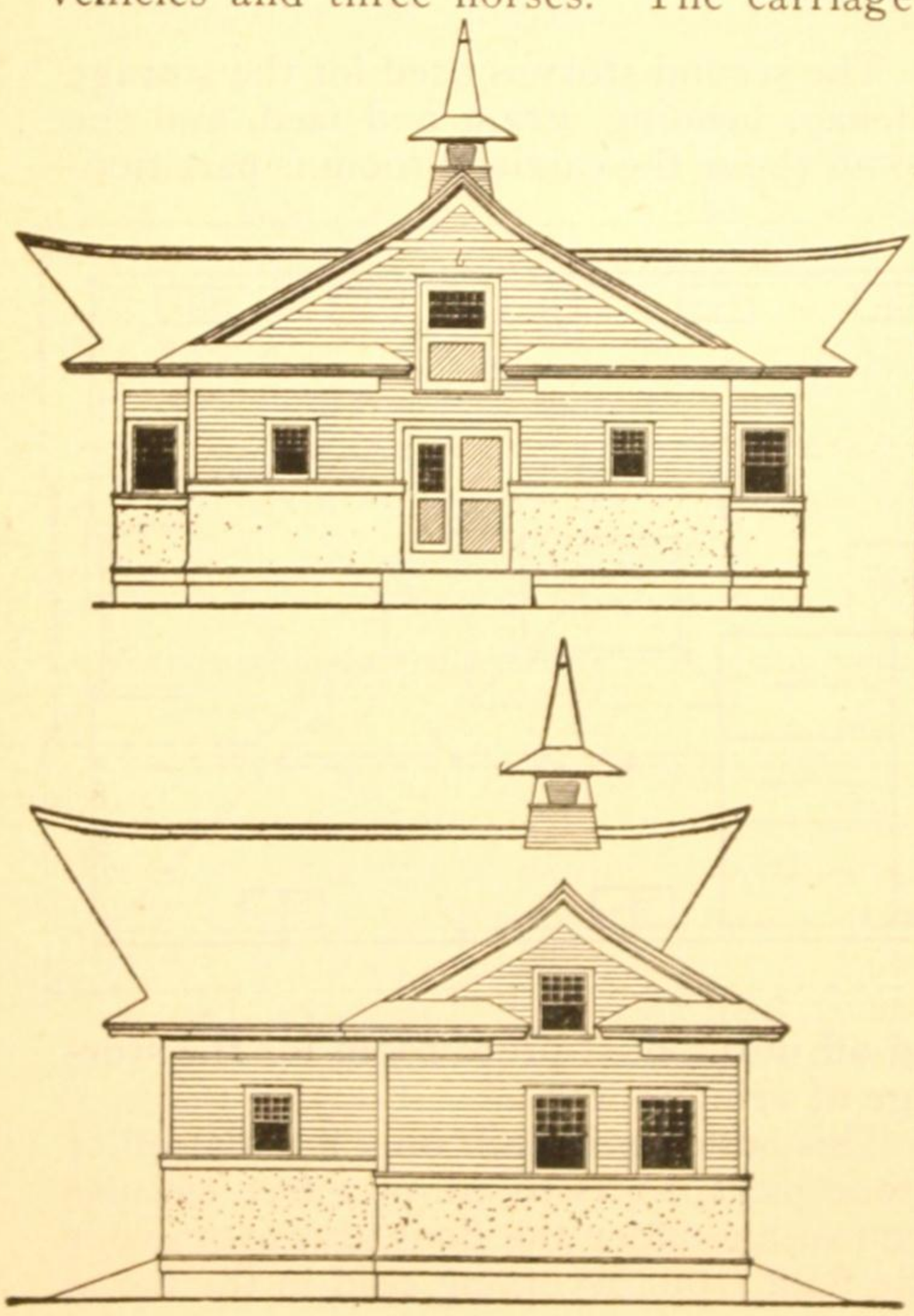
This building is built on a foundation of stone piers, so as to admit a free circulation of air under the floor and to prevent the floor from becoming cold in the horse

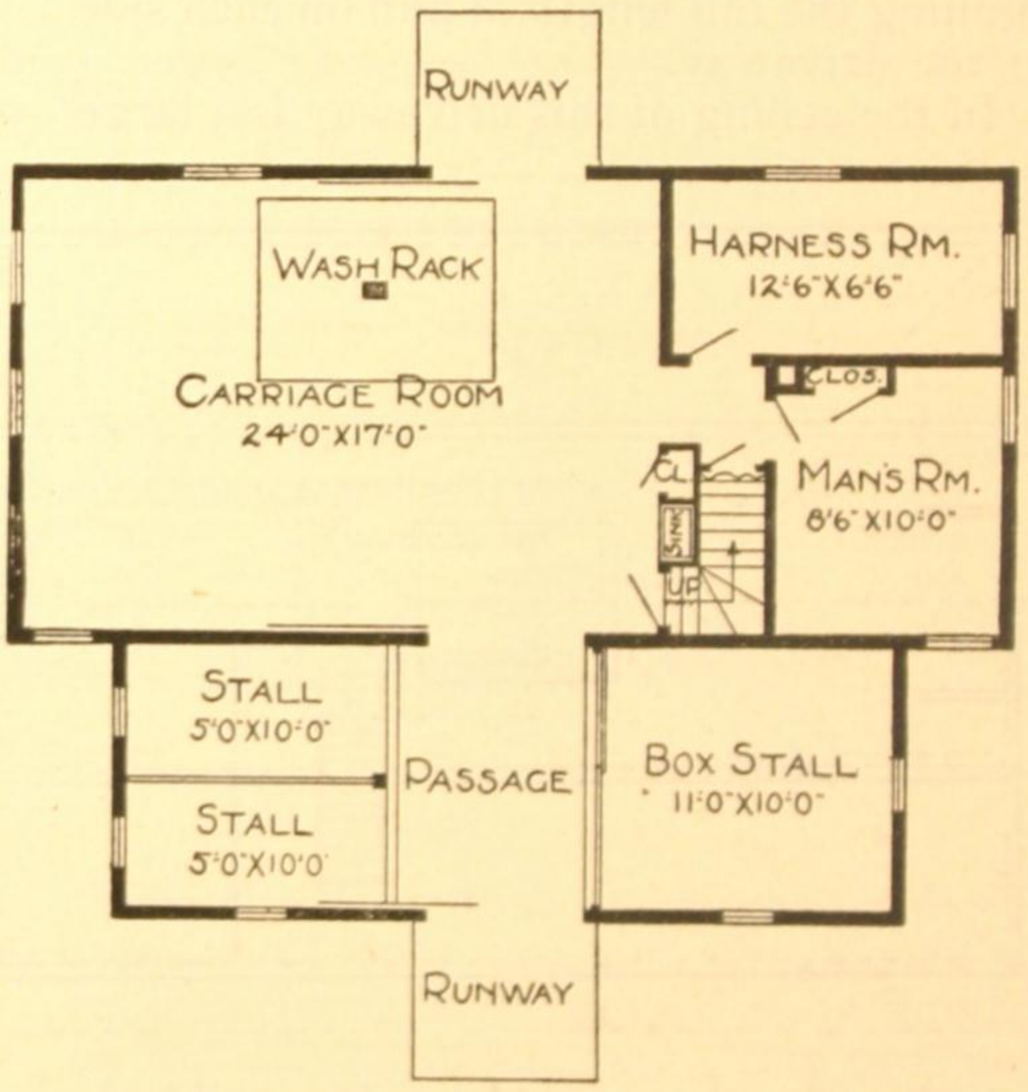
stable it is built, as will be seen in the detail above the longitudinal section, by first resting the joists upon the sills, then floored with a matched floor 1 inch thick, which is covered with a heavy building paper, then by 2 by 2 inch strips nailed one over each joist. The space between these strips is filled with mineral wool, then this entire surface is floored with a strong floor 1¾ inches thick, and on this are laid strips of various thickness to receive and form a pitch to the stall floors. On the sills over each stone pier is set a 6 by 8 inch post for the support of the second story floor and roof. These posts run up to the plate, which is a 6 by 8 inch timber, and at the second story joist level there is a 6 by 8 inch timber notched in between these posts for the bearing plate of the second floor joist. All these timbers are braced at all intersections with 4 by 6 inch braces. The outside walls are formed by filling in between these bents with 2 by 6 inch studding spaced 2 feet on centers and well spiked to the floor joist, sills and plates. The inside surface of these studding are covered with heavy building paper, then ceiled with matched flooring, and the outside surface of studding is also covered with paper and then sided with drop siding. The roof is of cedar shingles dipped in moss-green creosote stain, which in contrast with the white painted walls, makes a very artistic effect. The interior of the carriage room is finished in yellow pine beaded ceiling.

RESIDENCE BARN—A216

Cost of Blue Prints, $15.00

A residence barn to accommodate three vehicles and three horses. The carriage room is of good proportions and has a wide door at front and rear. The harness room and man's room are of good size, and conveniently located.





The construction of this barn is of the balloon frame; there is a concrete foundation. The ground floor is of cement and

all rooms are cement wainscoted up to the window sills, making the walls waterproof.

The exterior design is of a modern style with a Japanese style of roof which gives the building a very odd but charming artistic appearance.

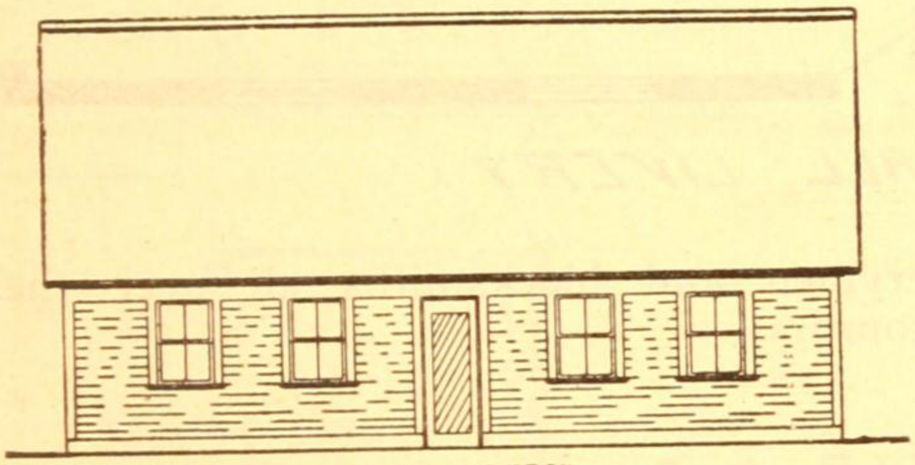
There are so many windows in this stable that it is very light inside and they give it an expensive look outside. It is not generally recognized that windows are about as cheap nowadays as any other part of the building. As soon as people generally grasp this idea all farm buildings will be made lighter, more sanitary and more cheerful.

The side walls are rough cast cement up to the windows and the balance of exterior vertical walls sided. The roof is of moss green stained shingle, which in connection with the white siding, grey cement and brown stained trimmings, makes a very striking exterior that would do credit to any neighborhood where the commonplace board-and-batten barn would be objectionable. This barn, though somewhat artistic in its outline, can be built at a reasonable price, and contains no work that cannot be executed with materials that can be bought from the stock of the lumberyard.

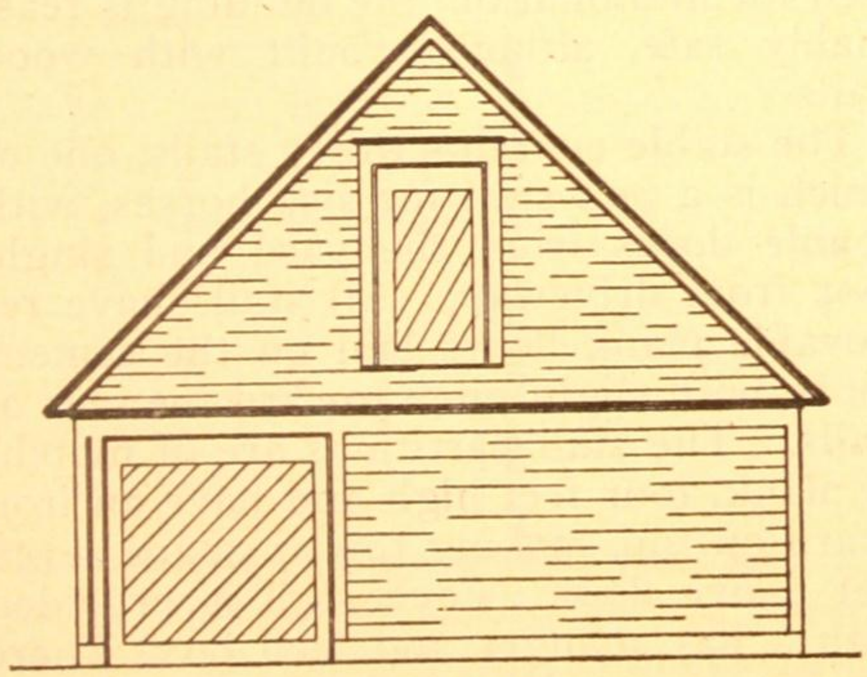
The interior makes very good provision for two or for three horses, there being two single stalls and a large box stall. The man's room is well finished and is very pleasant. The harness room is large and nicely lighted. There is a large convenient loft for hay and grain storage. The entire barn is exceptionally well lighted and ventilated.

SMALL LIVERY BARN—A138

For a village or a small city this plan offers a comparatively cheap building that may be used to advantage by a man who keeps four or five horses for hire. Usually in such cases it is not necessary to have a great deal of feed storage room because the hay is baled and sometimes the straw comes in bales. A good harness room is necessary and it often happens that the hostler wants to sleep in the stable and this room, ten by fifteen feet, is sufficient for such purposes.



FRONT ELEVATION

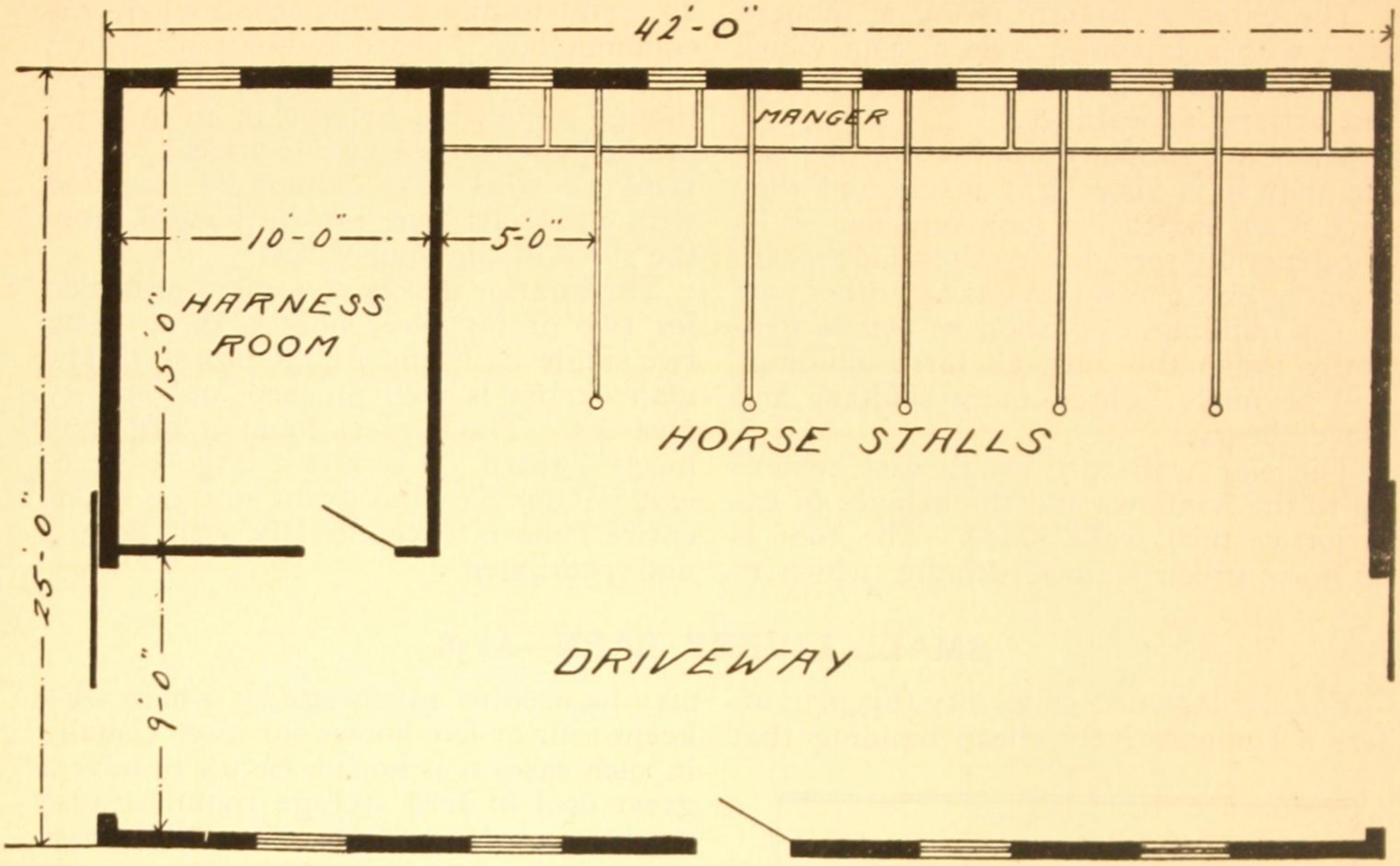


SIDE ELEVATION

The problem in all livery stables is how to take care of the different rigs. There are cutters and sleighs to be taken care of nine or ten months in the year, when they are not in use, and there are wagons in the way almost all the time. Storage room is expensive and sometimes ground room is an object.

Too often public stables are littered around outside of the building with old trash that should be sold for junk or burned up. Such conditions are more noticeable in the smaller places. But pride in keeping up one's property is just as valuable and just as necessary in a village as in the city. Perhaps liverymen and blacksmiths are a little more careless in this respect than any other class of citizens. Why

this should be so is a mystery. It costs nothing to be neat and neatness attracts place for everything and everything in its place is a suggestion which applies to liv-



FLOOR PLAN OF SMALL LIVERY

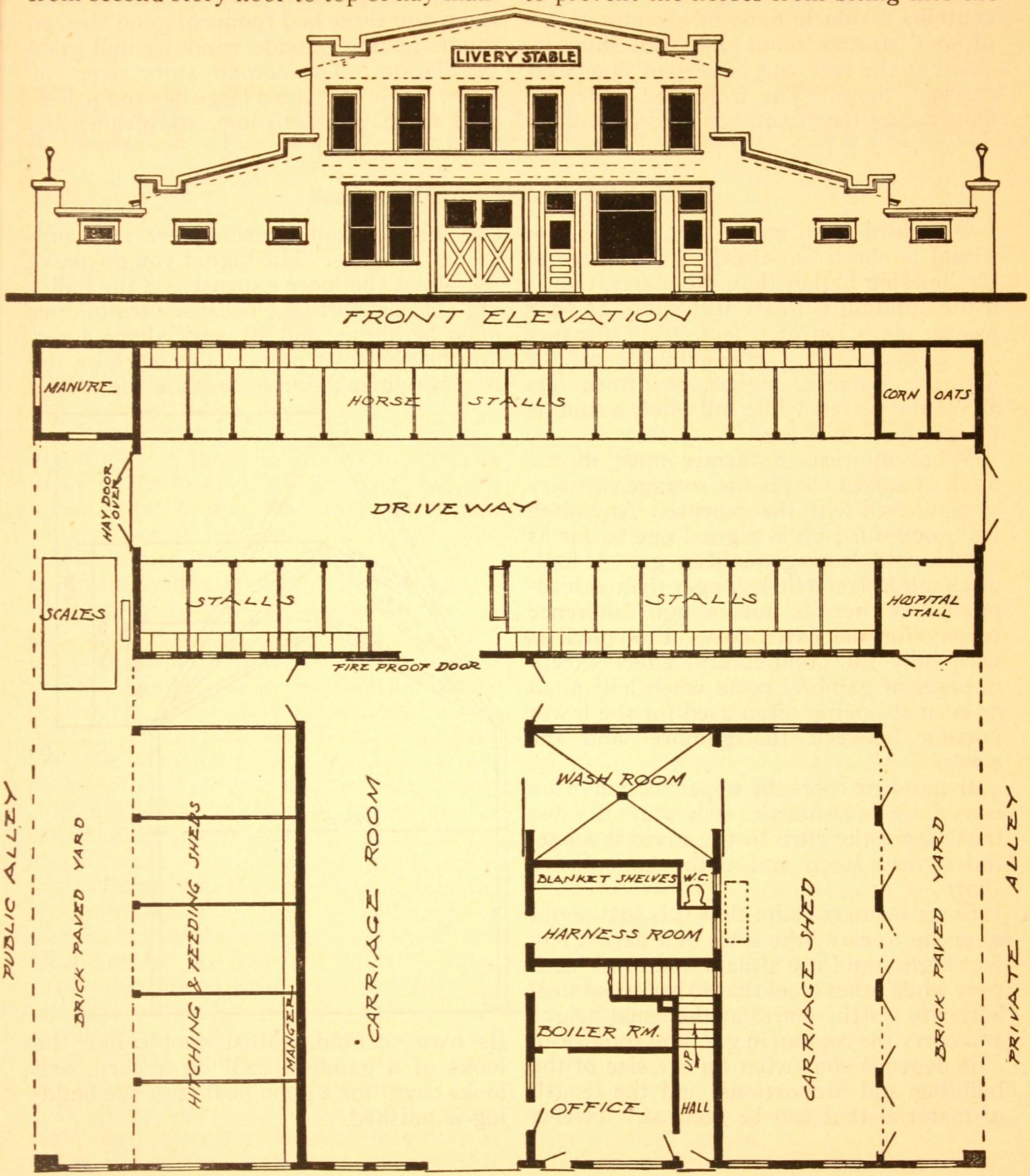
trade in these lines as well as others. From general observation it would seem that a erymen and blacksmiths all over the country.

LIVERY STABLE—A218

This stable is of frame construction, built on concrete foundation and has concrete floor throughout the entire ground floor area. The front building, containing the office, carriage room, wash room, etc., is separated from the building containing the horses by a cement fire-proof wall and fire-proof door. The entire exterior wall surface of building is covered with galvanized iron siding and a corrugated iron roof, making the exterior practically proof against fire. The boiler room has brick walls, fire-proof doors and cement floor and ceiling. With these precautions against fire, electric light being used for illumination, the building is reasonably safe, although built with wood walls.

The stable contains thirty stalls, one of which is a box stall for sick horses, with double doors from the yard and single door from driveway. All stalls have removable plank floors laid on the cement floors, with slight pitch toward the rear of stalls. The stall partitions are of matched plank, four feet high and have an iron guard on top, making top of guard seven feet above floor. Each stall is provided with a hay manger and feed box. There is a hay chute of galvanized iron between

each two stalls, this hay chute running from second story floor to top of hay manger; is built larger at the bottom than at the top to prevent hay from clogging. The bottom of mangers and feed boxes are filled with at least four inches of cement to prevent the horses from biting into the planks, and the front edge of the manger is covered with strap iron fastened with counter-sunk screws.



The carriage room has a clear 22 foot span and is 50 feet long. At the rear it contains a vehicle hoist or elevator to additional storage room and paint shop, located at the rear end of second floor over carriage room. The front end of second floor facing the street, contains a comfortable flat, consisting of a parlor, living room, dining room, pantry, kitchen, bathroom and three bed rooms of good size, all rooms having outside windows and good ventilation. The second story over the horse stable contains a large hay room, bedding room, storage room, and grain bins.

PITCH OF BARN ROOFS—A228

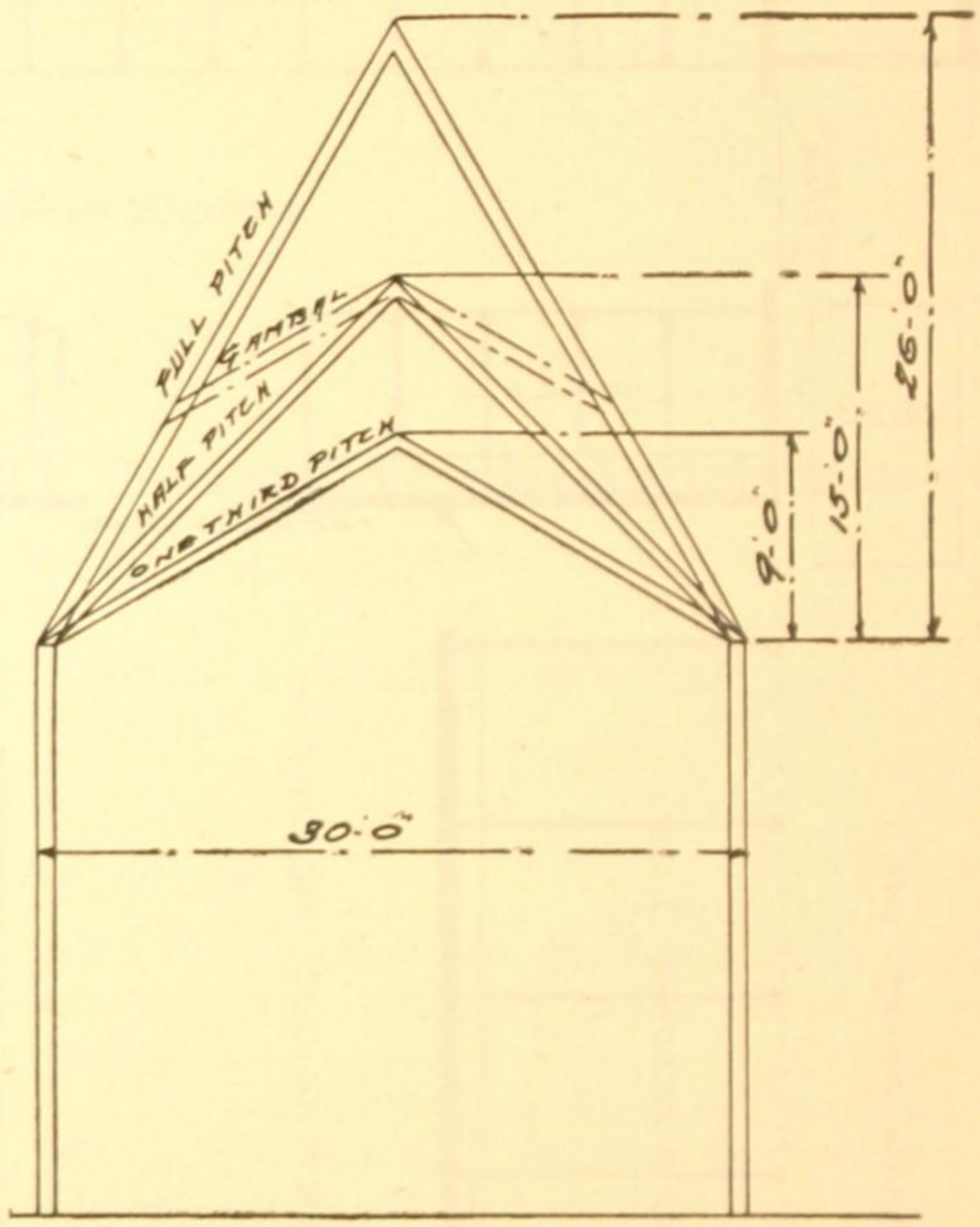
One-third pitch means that the peak of a roof is about one-third of the width of the building higher than the plates, that is if the building is thirty feet wide the peak has an elevation of 9 feet, scale measure above the plates. Half-pitch would be half the diameter higher, or fifteen feet above the plates, while full pitch would be 26 feet scale measure.

What interests a farmer most in the pitch of a barn roof is the storage capacity as compared with the expense. Any pitch from one-third up is a good one so far as service and lasting qualities go. A half-pitch might last a little longer than a third-pitch, but there is not enough difference to pay for the extra cost. Full pitch is used only for architectural effect except in cases of gambrel roofs when half pitch or even steeper is often used for the lower portion between the gambrel and the eaves.

In gambrel roofs the upper section often is as flat as one-fourth pitch while the distance from the curb to the eaves is sometimes very steep and both sections are short.

Some farmers claim that it is just about as cheap to carry the sides of a barn a few feet higher and use a plain one-third pitch roof while others feel that it is a great deal better to set the plates at the usual height and carry the roof up in gambrel roof form.

It depends somewhat on the size of the building and proportions, and the length of material that can be secured. Twelve and sixteen foot boarding are the commonest lengths. The higher you go above the plates the more expensive is the building in proportion, because scaffolding must be higher and all work above a certain height costs more. The work on the roof is a little different because the roof is



its own scaffold. Most people like the looks of a gambrel roof on a barn, and looks count for a good deal after the building is finished.

Feed Lots and Cattle Sheds

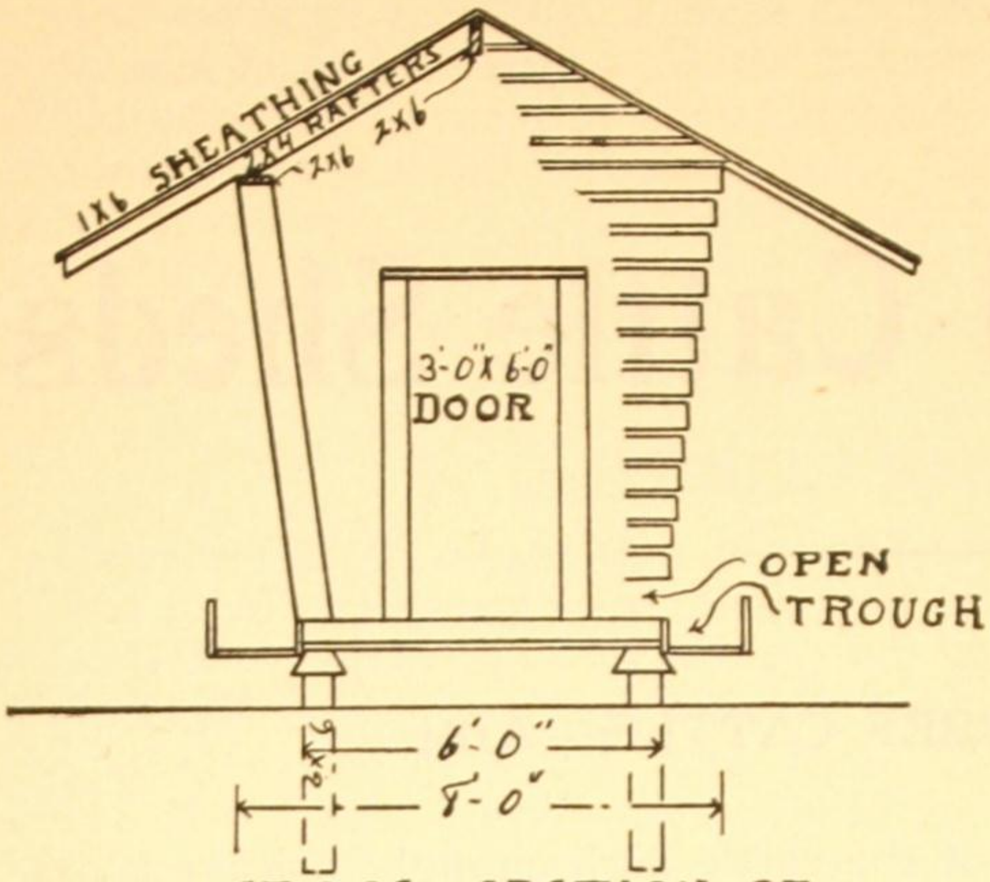
FEED LOTS FOR BEEF CATTLE—A184

WHERE cattle are fed in large numbers it pays and pays well to fit up properly for the business. In the corn belt, buying thrifty young cattle and finishing them for the market, is a splendid business in the hands of men who understand how to buy, how to feed and how to sell. The old fashioned way of putting a fence around a mud-hole and confining a bunch of cattle in the mire for weeks or months at a time ceased to be profitable long ago, but unfortunately some men haven't found it out. Considerable engineering ability is required to plan and construct feed lots for the accommodation of large numbers of cattle in such a way as to make the animals comfortable and to economize labor.

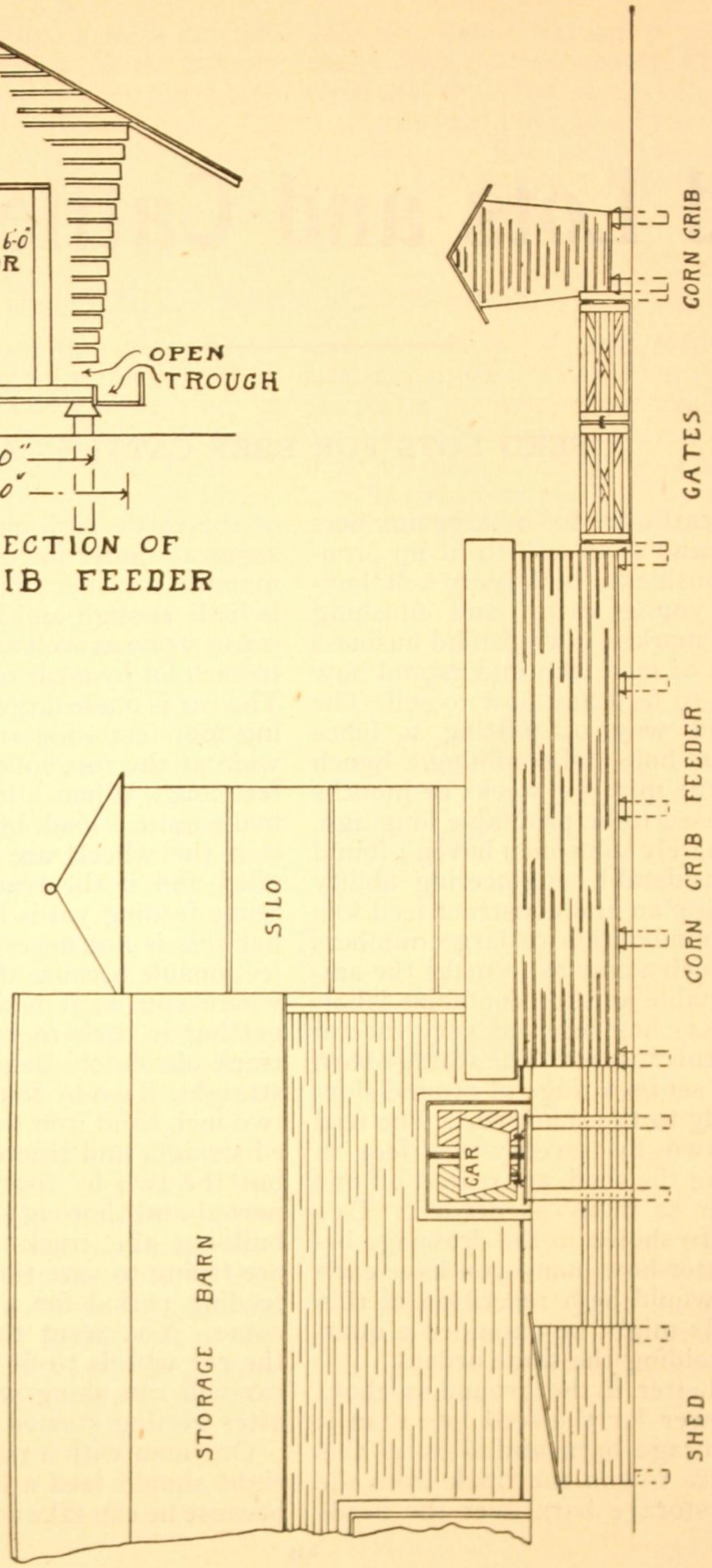
Plan (A184) has received very careful attention in this respect. The storage barn and silos are set on a ridge of ground sloping preferably to the southwest. The feed lots, thirty-two by seventy-two feet in size, including the shed, are fenced off one after another as many as needed. Two yards only are shown in the drawings because no matter how many you have each pair of two would be a repetition of this pair. The lots might be extended a quarter of mile holding the same order.

It works better if the ground is about eight feet lower for the feed lots than it is for the storage barn and silos as this gives a chance to run the track from the floor of the storage barn over the heads of the cattle high enough to leave a passageway under for a pair of horses and a manure spreader. Eight feet in the clear is little enough and it is high enough because straw as well as feed will be brought to each lot by a car on the overhead track. The car is made large for this purpose, being four feet wide at the bottom, six feet wide at the top, four feet high and eight feet long. When filled with silage it will make quite a load, but one man can move it if the wheels are large and kept well oiled and if the truck is level and true. Some feeding yards have an incline track, but this is not necessary, in fact it is objectionable because the car will never stay where you want it and it is uphill work getting it back to be refilled. Make the track absolutely dead level and perfectly straight. Two by fours plated on top with two inch band iron that has been hammered straight and true will answer very well but the two by fours must be well supported and thoroughly spiked in place. In building the track remember that you are trying to save time and labor at every feeding period for a number of years to come. You want the track so true and the car wheels to fit so perfectly that the car will run along without much friction after getting started.

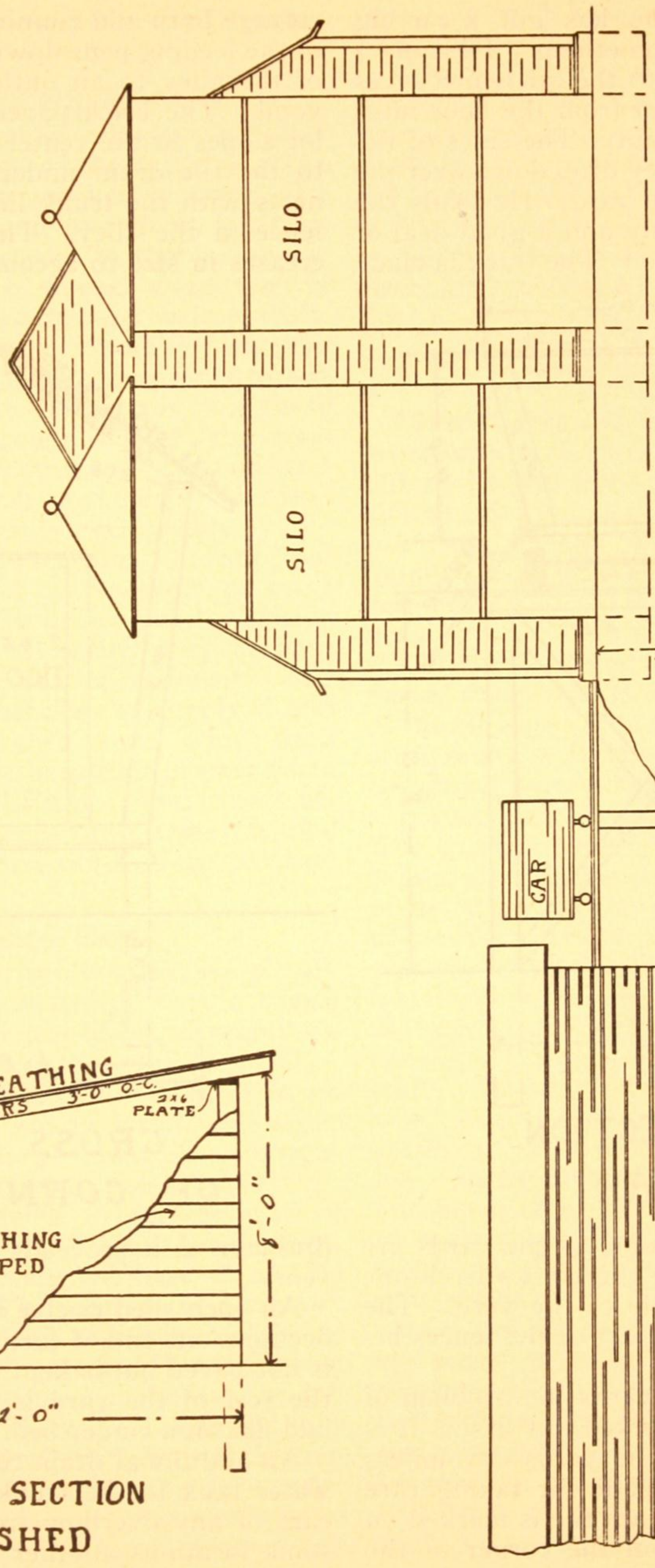
One man with a rig like this that works right should feed a large bunch of cattle because he can take advantage of his work.



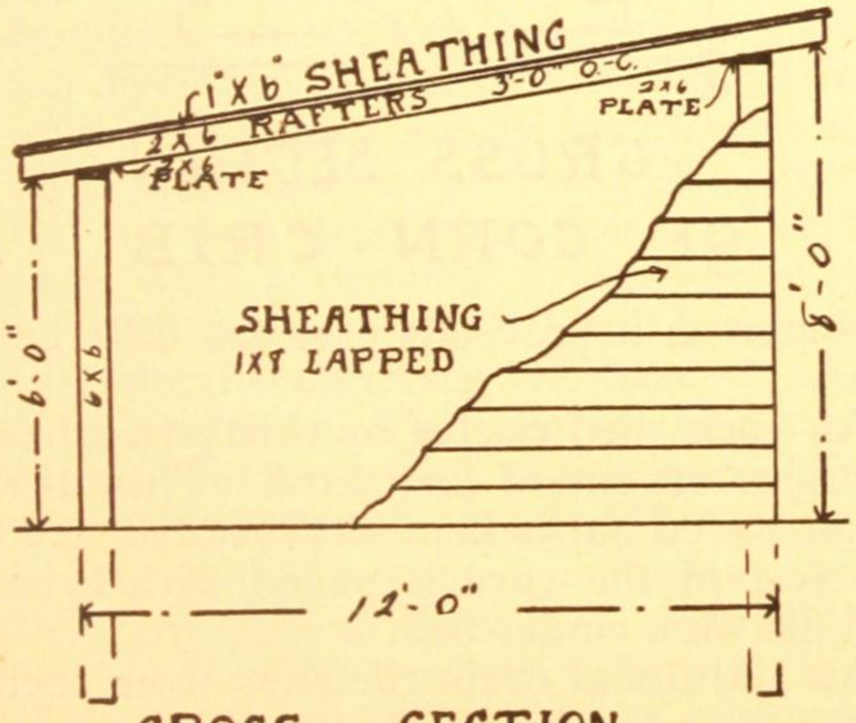
CROSS SECTION OF
CORN CRIB FEEDER



WEST SIDE ELEVATION



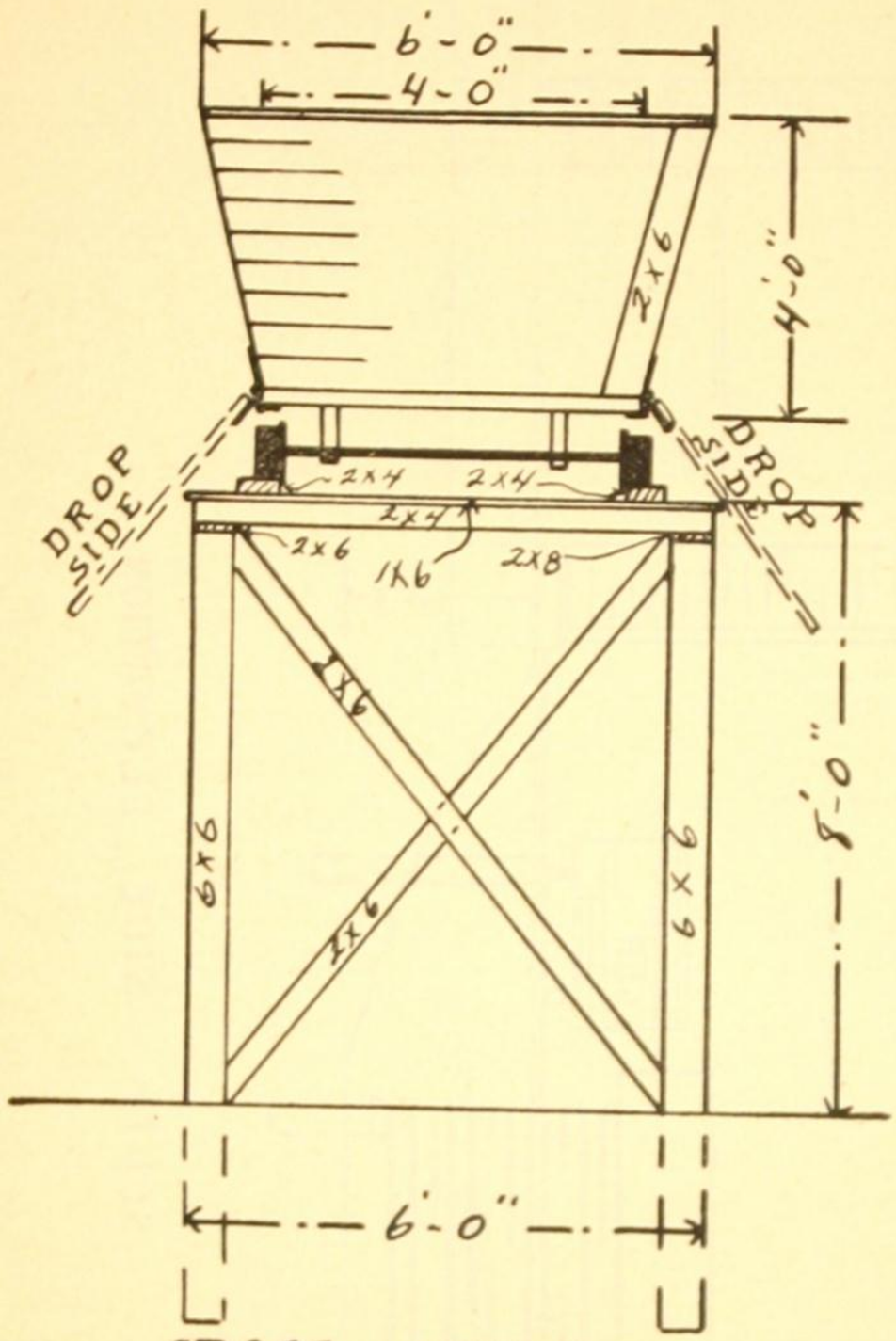
SOUTH SIDE ELEVATION



CROSS SECTION OF SHED

CORN CRIB

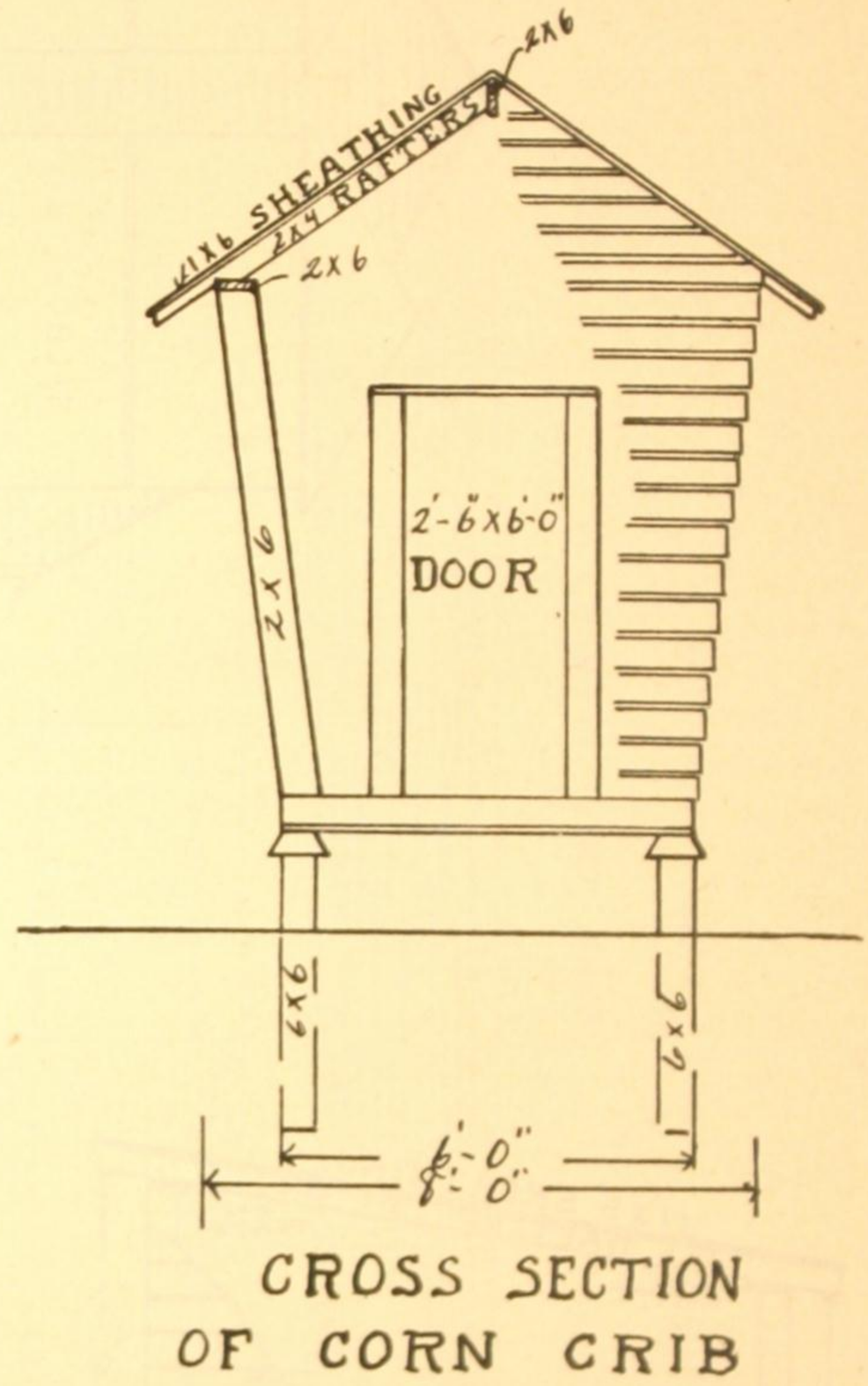
In the first place he has got a car big enough to hold something. He runs a chute from the silo to the car which saves forking the silage up from the floor until the silo is nearly empty. The sides of the car are hinged so they drop down over the feeding racks in the yards. He loads the car quickly and easily and a good deal of the stuff unloads itself. The track is made



CROSS SECTION OF CAR

in sixteen foot sections, as the yards are thirty-two feet wide the tracks have one support in the middle of the yard. The other supports form part of the fences between the yards.

In laying out the yards the problem of drainage must be worked out first. It is impossible to have the yards dry unless ample provision is made for taking care of the rainfall. A drain tile is marked on the plan leading from the corner of the storage barn and running across the ends of the feeding pens down the whole length of the alley to an outlet in the field beyond. The brick pavement in each feed lot slopes to the center to lead the water to the tile drain underneath which connects with the trunk line of tile near the fence in the alley. This main drain increases in size to accommodate the extra



CROSS SECTION OF CORN CRIB

drainage as it proceeds past the different pens.

An open shed twelve by thirty-two feet occupies one end of each yard. This shed is not paved but is kept well bedded. All the rest of the yard is paved with brick laid flat on a cinder bed.

An additional drain tile runs from each water tank to the trunk tile line to take care of any overflow from the tank. In some locations another tile drain will be

necessary at the back of the shed because the ground must be kept dry.

Water Supply.

Good fresh water in sufficient quantity to supply the needs of the cattle in these feed lots is quite a problem in itself. The water must be good and there must be plenty of it. It must also be supplied under pressure and carried to each water tank in pipes placed under ground below frost. There must be a valve placed in each pipe running to each water tank so constructed that it won't freeze. The stems from these valves should be extended up to the overhead track so a man can walk from one end of the feeding yards to the other and regulate the water easily and quickly.

Generally the water must be supplied by a windmill and a reservoir of some kind. A cement basin in a nearby hillside is perhaps the most satisfactory because when once made it is permanent. The source must be sufficient to supply it and the windmill or other power which does the pumping must be powerful enough to do the work at all times. You cannot afford to take chances on a water famine with several hundreds of feeding cattle on your hands.

Storage Barn.

In the plan not much attention is paid to the storage barn except that it shows the most convenient location. Every feeder must plan storage to suit his way of doing business. If he has a large farm on which he grows alfalfa, grain and other crops that make large quantities of roughage he must provide an extensive storage barn with appliances to get the stuff in and out again when needed for feeding.

Generally speaking the barn should be large and high. The capacity of a storage barn is increased by additional height at a very rapid ratio because all kinds of loose fodder packs very close in the bottom and lies very loose at the top. A deep bay may be filled to the peak with hay at haying time and settle sufficiently to hold a large quantity of sheaf wheat a few weeks later, but a shallow mow don't hold much at any time. It don't have the weight sufficient to pack it.

There will, of course, be a good solid floor over the car track and there will be chutes or openings to let the hay down directly into the car and there will be a ladder to let a man down into the car to tramp it full. The same horse fork that is used to put the fodder in will move the stuff from the other parts of the barn to this floor as it is needed.

Brick Pavement.

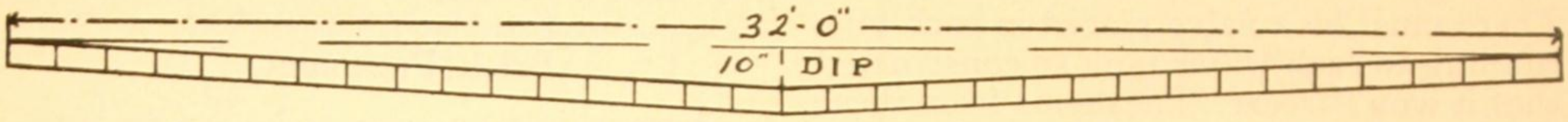
There is only one way to have a feeding lot clean and that is to pave it. There are different kinds of pavements more or less virtuous but the cheapest satisfactory bottom for a feeding yard is brick laid on a foundation of sand and cinders. The cinders help drainage and prevent the bricks heaving with the frost. It is easier to lay the bricks level and smooth if an inch or two of sharp sand is scattered over the top of the cinders. The sand holds the bricks in place and a little sand does not prevent the water from getting away.

A great deal depends on the foundation. The ground should be graded with the proper slope to the center gutter. It is not necessary to have an opening in the bricks, the cracks between the bricks are sufficient, but a line of tile should be carefully laid underneath deep enough to be out of the way of frost. Frost does not penetrate deep in a feeding yard under a brick pavement. During some winters the ground won't freeze. There is more or less litter scattered about that prevents hard freezing. Probably if the tile starts a foot below the brick at the shed end and deepens to two and one-half feet where it joins the trunk tile in the alley the drain will give no trouble.

Lay the tile first smoothly and evenly and cover the joints with pieces of broken tile, then fill in with coarse cinders using no earth over the tile. Tile in a mud-bottom barn yard seldom works satisfactorily because the tramping of the cattle packs the mud so that the water can't get through. A mud-bottom yard has never

been drained and the chances are that such a yard never will be drained in a satisfactory manner.

Commence laying the brick in the center over the tile and work both ways to the fences. The herring bone style of laying brick gives the best satisfaction. No two brick tip alike when laid like this. Of course you want every brick to lay flat and level, but you don't always get just what you want. If good hard burned bricks are laid flat, herring bone style on a good foundation you will have more comfort and satisfaction than you ever had in a feeding lot before. If you have lots of money to use and don't care for expense then put in a cement pavement and build it just the same as sidewalks are built. You will then have a yard that will last a lifetime, but it won't be as dry as the brick because the water must all run to the end or center outlet on top of the pavement before it can get away.



DETAIL OF BRICK PAVEMENT

The Shed.

A continuous shed is designed to run the whole length of the feeding plant without a break. The shed is twelve feet wide and eight feet high in front and six feet six inches high at the back. The shed faces the south and the front is left open to admit sunshine. The construction is light and cheap as shown in the detail drawing. There are no partitions except the fences between pens which run to the back of the shed, in fact the fence posts and shed posts are the same.

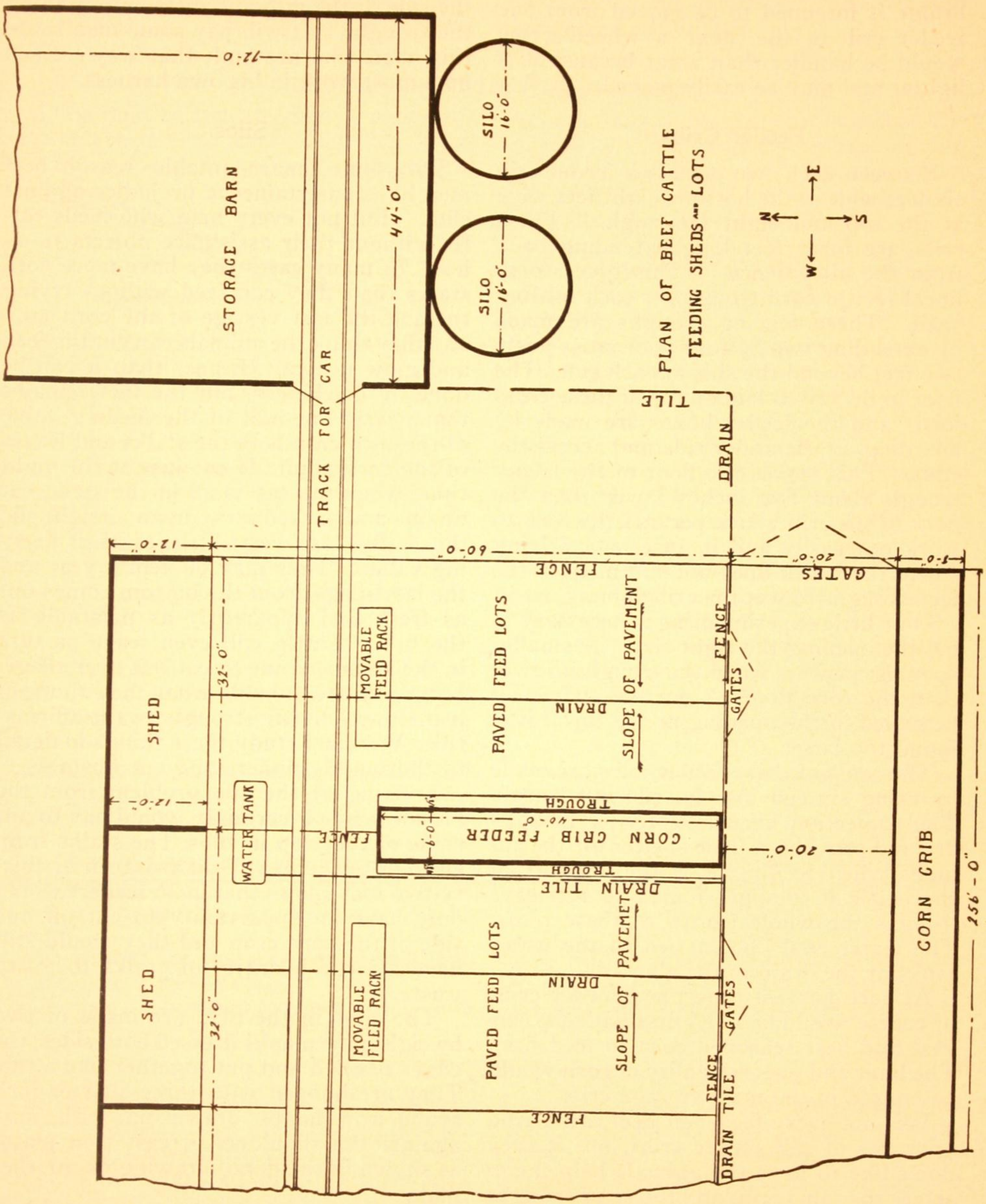
Two by six rafters fourteen feet long are used for the roof. These are covered with sheathing boards, dressed one side, and on this is stretched a good quality of felt roofing. The north side is banked with cinders to prevent the cold winds from blowing under and the ground floor of the shed slopes to the brick pavement. A liberal supply of straw for bedding is kept in the shed and this is carefully shaken up every day.

Feeders now-a-days appreciate the importance of making animals comfortable. It takes a good deal of feed to supply the heat dissipated by animals lying on the cold ground. Straw is cheaper than corn.

Beef cattle don't require much protection against the cold. Their thick winter hair and hides are sufficient if they are kept dry and well fed. Cattle will gain a little faster on the same amount of feed if kept warmly stabled, but they must have fresh air and the extra expense of individual attention when handling them in a stable more than eats up the additional profits from the extra gains made. A feeding rack well up above the ground along the back of the shed is a good thing at times in rainy weather; it induces the cattle to stay inside. It is better to put the feeding racks on the ground when you use them regularly every day, but ground space in the shed is limited and such racks will be used occasionally only. For this reason it is not desirable to take up any more ground space than necessary for this purpose.

Corn Crib.

On the south side of the alley way is a corn crib six feet wide at the bottom, eight feet wide at the top, ten feet high above the foundation posts and as long as necessary. This corn crib is intended for storage purposes to hold corn enough to last all winter. There is a door in the end and doors along the alley side thirty-two feet apart, each door being opposite the door of a feeder crib. A temporary bridge reaches from one door to the other so the



PLAN OF BEEF CATTLE FEEDING SHEDS AND LOTS

carrying may be done with a wheelbarrow or car running on a track. As the bridge is intended to be moved from one feeder crib to the next a wheelbarrow would be handier than a car because it is lighter and may be easily moved.

Feeder Cribs.

Between each two pens is a feeder crib six feet wide at the bottom, eight feet wide at the top and eight feet high. These cribs are forty feet long extending back from the alley fence. This gives forty lineal feet of corn trough for each feeding yard. These feeding troughs are made by extending two by four floor cross joists two feet beyond the sills at each side. The floor in the crib is laid on top of these cross joists and the feeder boxes are made by boarding on the under side and across the ends. This makes the floor of the feeder trough about five inches lower than the floor of the crib which permits the corn to work out easily and in case of a driving storm the water does not run in from the feed troughs to wet the crib floor.

Some little experimenting is necessary to get the opening the right size. A smaller opening answers when the trough is lower than the corn floor. A narrow strip may be nailed in the opening at the top if it is found too large.

The roofs of these feeder cribs are made by using sixteen foot boards full length. The projection keeps the feeder troughs dry and provides a little shelter for the animals when feeding. For the comfort of the cattle it is a good plan to run eave troughs the whole length of these roofs. The water could be carried to the water tanks or the drain in the alley.

At corn harvest time these feeder cribs of course would be filled first with the earliest and best seasoned corn to feed first. The later and poorer quality of corn would be housed in the main storage crib.

It is not every feeder of beef cattle who approves of self feeder cribs, but if they don't like to have the animals help themselves the same cribs and the same troughs will be just as useful, so that the man who really loves to work may dig the corn out, load it in a basket and carry it around to the side of the crib and distribute it along the troughs. It will pay some men to do this, men who are built that way. Each man must work in his own harness.

Silos.

For some unaccountable reason beef men have entertained a prejudice against silos. But not every man who feeds cattle without their assistance objects to silos. In many cases they have more corn stalks than they can feed without trying to save the last vestige of the corn crop and they think the animals can cut the feed and mow it away cheaper than it can be done by machinery, but the fact remains that nearly one-half of the feeding value of the corn crop is in the stalks and leaves of the corn plant. If cut just at the right time, when the sap is all in the stalk, cut up fine and packed away in an airtight silo the stalks lose very little of their feeding value. They may be kept a year and the last silage from the bottom comes out as fresh and apparently as palatable as the first. Cattle will even leave pasture in the summer time to eat left over silage. If we ask the animals what they think of it their actions are strongly in the affirmative. We must study these things in detail to thoroughly understand our business.

Looking at the silo problem from the broadest side it certainly would pay to put some of the crop in silos. The stalks from eigth or ten acres will fill a sixteen by thirty-two foot silo so that most feeders would only have an opportunity to cut off one side of the corn crop and they would still have a large quantity of stalks to go to waste.

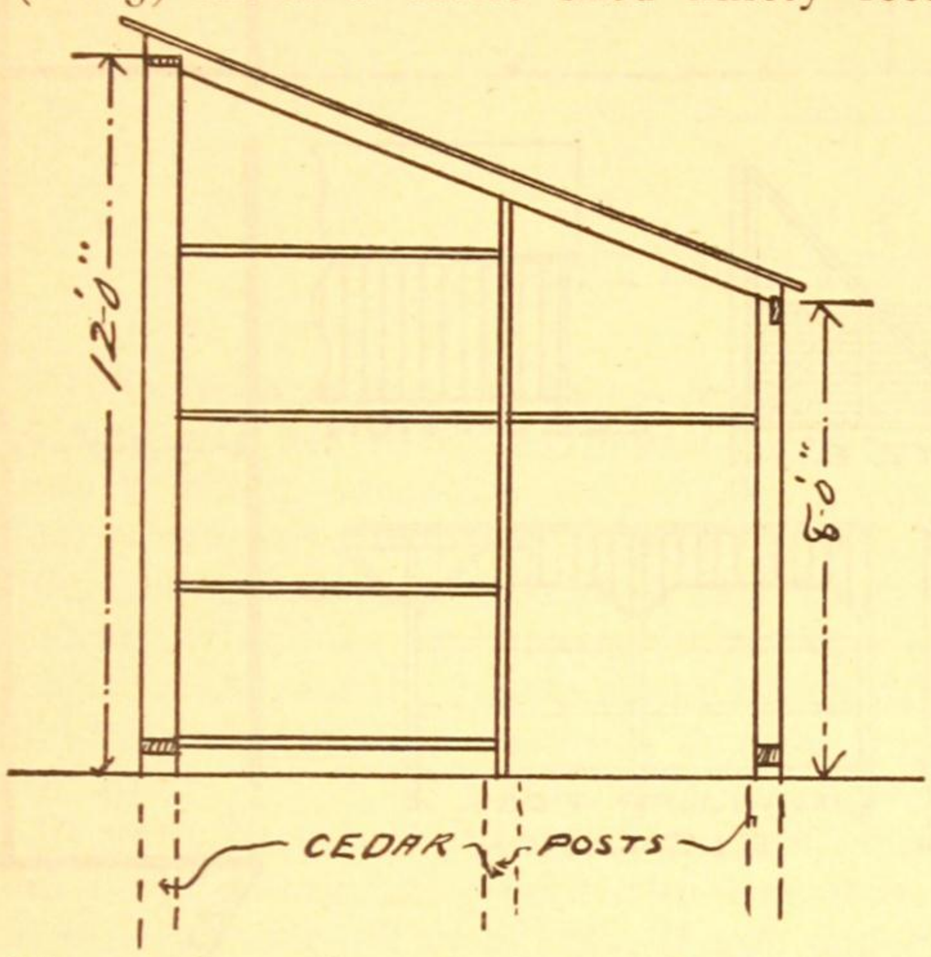
The silos in the plan are made of two by eight pine planks dressed both sides, the edges beveled and put together like a tub. They are hooped with three-quarter inch round iron hoops drawn up with nuts against the shoulders of cast iron plates as shown in the detail drawing on another page.

This feeding plant is designed to save

labor and to utilize feed to the best possible advantage. It would be difficult to build a large plant any cheaper and have it satisfactory. It would also be difficult to build, on any other plan, a thoroughly practical plant that could be extended indefinitely as the business grows without altering or rebuilding.

CHEAP CATTLE SHED—A123

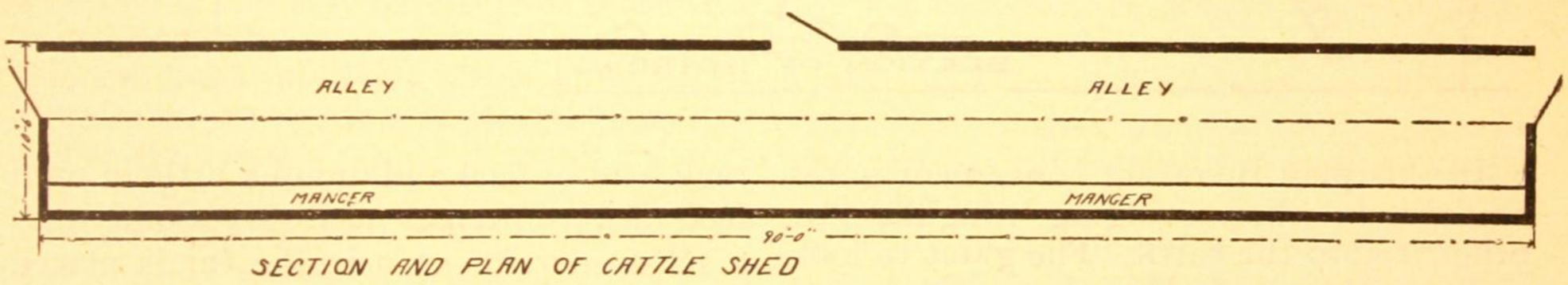
Some kind of a cattle shed is necessary in connection with every feed lot. Plan (A123) shows a cattle shed ninety feet



long and ten feet six inches wide. It is built of two by fours for framing, covered with boards twelve feet and sixteen feet long which cut to advantage without waste except at the ends.

There is a low-down manger which runs the full length of the shed against the back wall. The front side of the manger is bedded in the ground which together with a little banking on the outside prevents the cold winds from blowing under. Some feeders fail to realize the importance of this precaution. The north wind seems much colder when it forces through a small opening. There is something about the bottom of a shed that seems to invite a current of air from the north, but this feed manger arrangement seems to get the better of it. Mangers should be low for another reason. For thousands of years cattle have been accustomed to feed from the ground. While in pastures they keep their heads down nearly all of the time, but for some unaccountable reason they are expected to hold their heads two or three feet high when being fed artificially.

The shed is supported by short cedar posts which are set well into the ground, the tops of them being cut almost even with the surface. The doors are made wide enough and high enough to get in easily with a manure spreader, and there are no posts or partitions in the way so that it is easy to clean out the manure.



SECTION AND PLAN OF CATTLE SHED

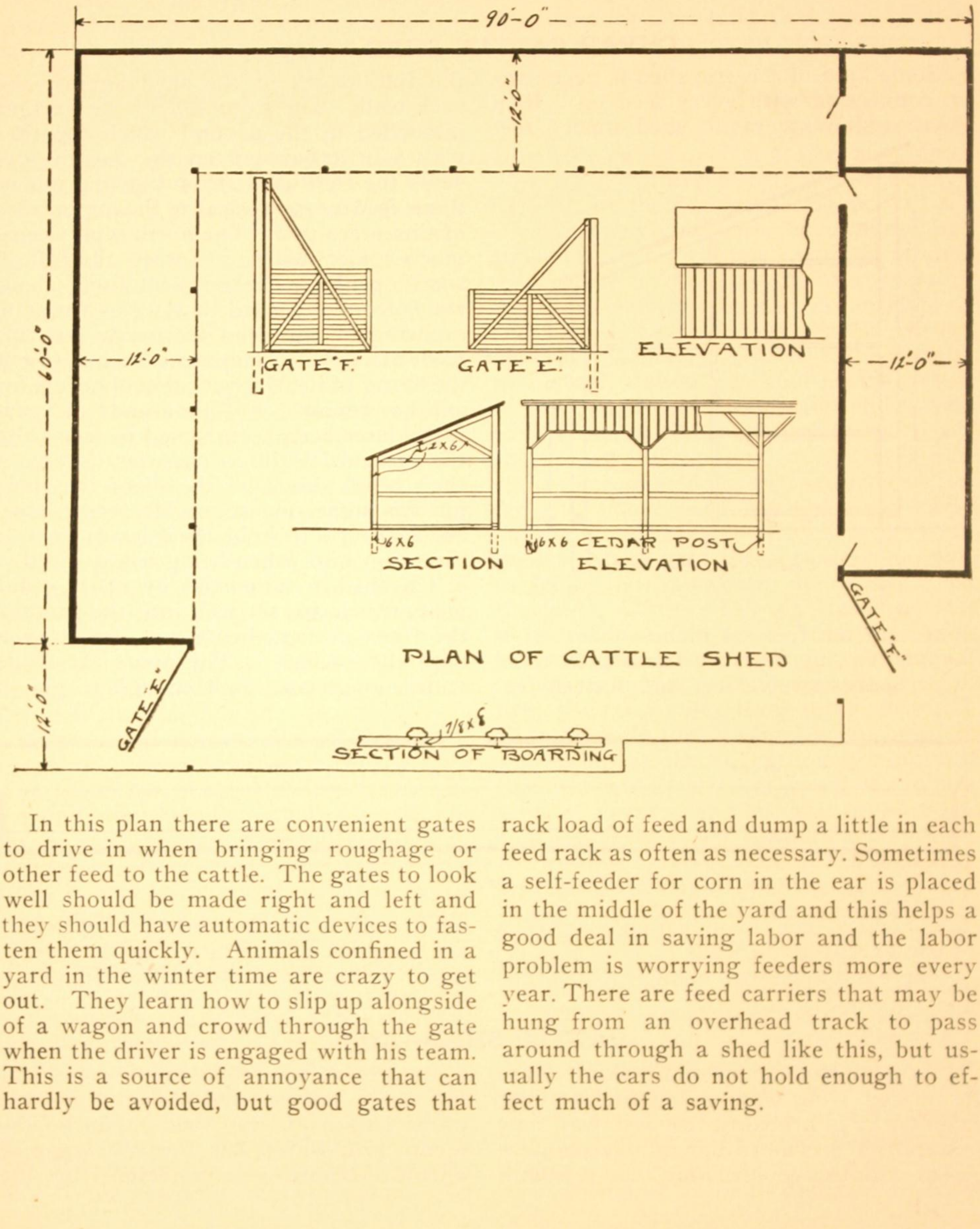
CATTLE SHED—A155

Sheds on three sides of a hollow square is an old style way of building feeding sheds. It is probably the best way now except that it is more difficult to economize labor with this construction than it is with a straight away proposition where you can run a railway and a feed truck the whole length of the shed. The hollow square proposition has the advantage of warmth because it is protected from the

east, west and north winds. Yards like this are always built opening towards the south.

swing easily and fasten quickly help a good deal.

It is customary to drive around with a



In this plan there are convenient gates to drive in when bringing roughage or other feed to the cattle. The gates to look well should be made right and left and they should have automatic devices to fasten them quickly. Animals confined in a yard in the winter time are crazy to get out. They learn how to slip up alongside of a wagon and crowd through the gate when the driver is engaged with his team. This is a source of annoyance that can hardly be avoided, but good gates that

rack load of feed and dump a little in each feed rack as often as necessary. Sometimes a self-feeder for corn in the ear is placed in the middle of the yard and this helps a good deal in saving labor and the labor problem is worrying feeders more every year. There are feed carriers that may be hung from an overhead track to pass around through a shed like this, but usually the cars do not hold enough to effect much of a saving.

Poultry Houses

THE BEST POULTRY HOUSE —A219

THE cheapest poultry house may not be the best, but it has been demonstrated that it is not necessary to go to a great deal of expense to make a poultry house that is as good as the best. A few fundamental principles will cover the whole subject. A poultry house must be clean, airy and dry, so the location is very important.

If you ask any experienced poultry man what one thing has given him the most trouble he will tell you lice. If you chase down a failure in poultry raising and get at the true inwardness you will find lice at the bottom. Knowing this to start with one of the first requisites is to build a house that may be easily and thoroughly cleaned and kept clean. Have the word cleanliness stamped on the house from one end to the other.

To accomplish this every article of furniture in the house must be removable. There must not be a crack or crevice to harbor lice that you cannot fill with crude oil or some other disinfectant and you must have a handy cleanout where the litter may be removed and replaced with new clean material with as little work as possible.

Next to cleanliness comes ventilation which in a poultry house means admitting plenty of fresh air without the slightest suspicion of a draft, a problem that has caused more experimenting than any other one item in connection with poultry raising.

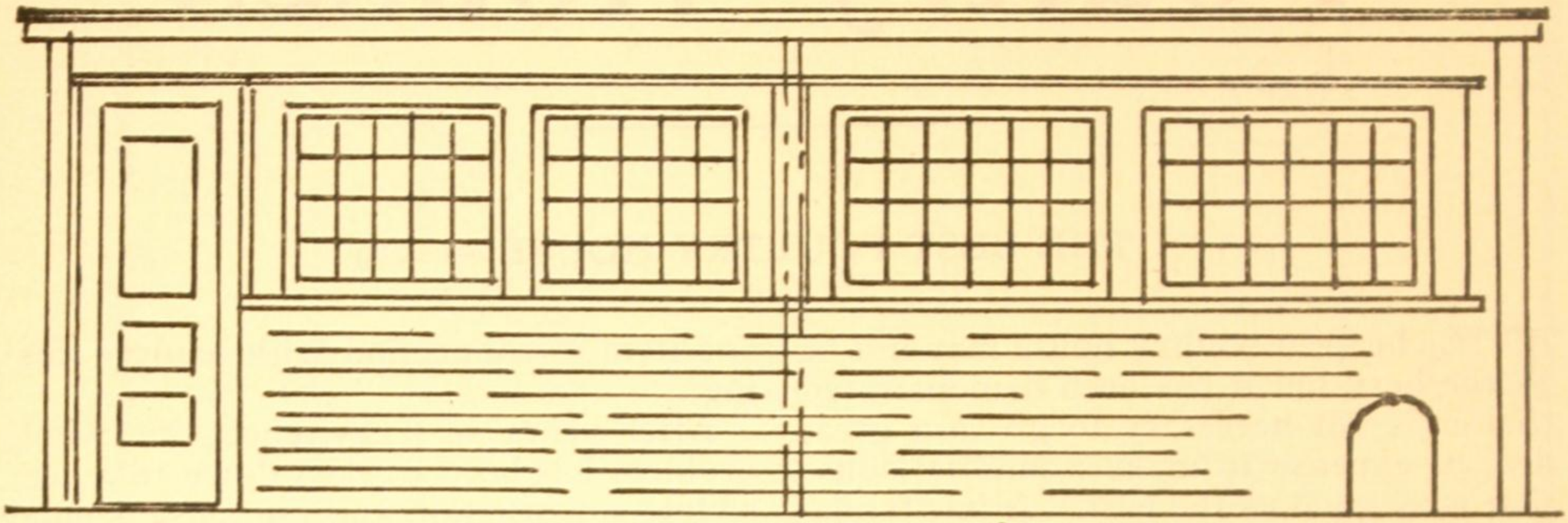
After years of experience the whole problem has been worked down to a very simple construction and the most popular house today is a low, cheap affair that may be built by any intelligent farm hand if he will simply read and follow instructions. Poultrymen differ in regard to the width of a house. Some want a house from twelve to sixteen feet wide so the sun can shine clear to the back of it; other poultrymen want a house from sixteen to twenty-four feet wide so they can house more poultry at practically the same expense. We are showing the general plan and giving the reason why without specifying any special width. It is understood of course that these houses may be any length as one pen is a duplicate of the other all the way through.

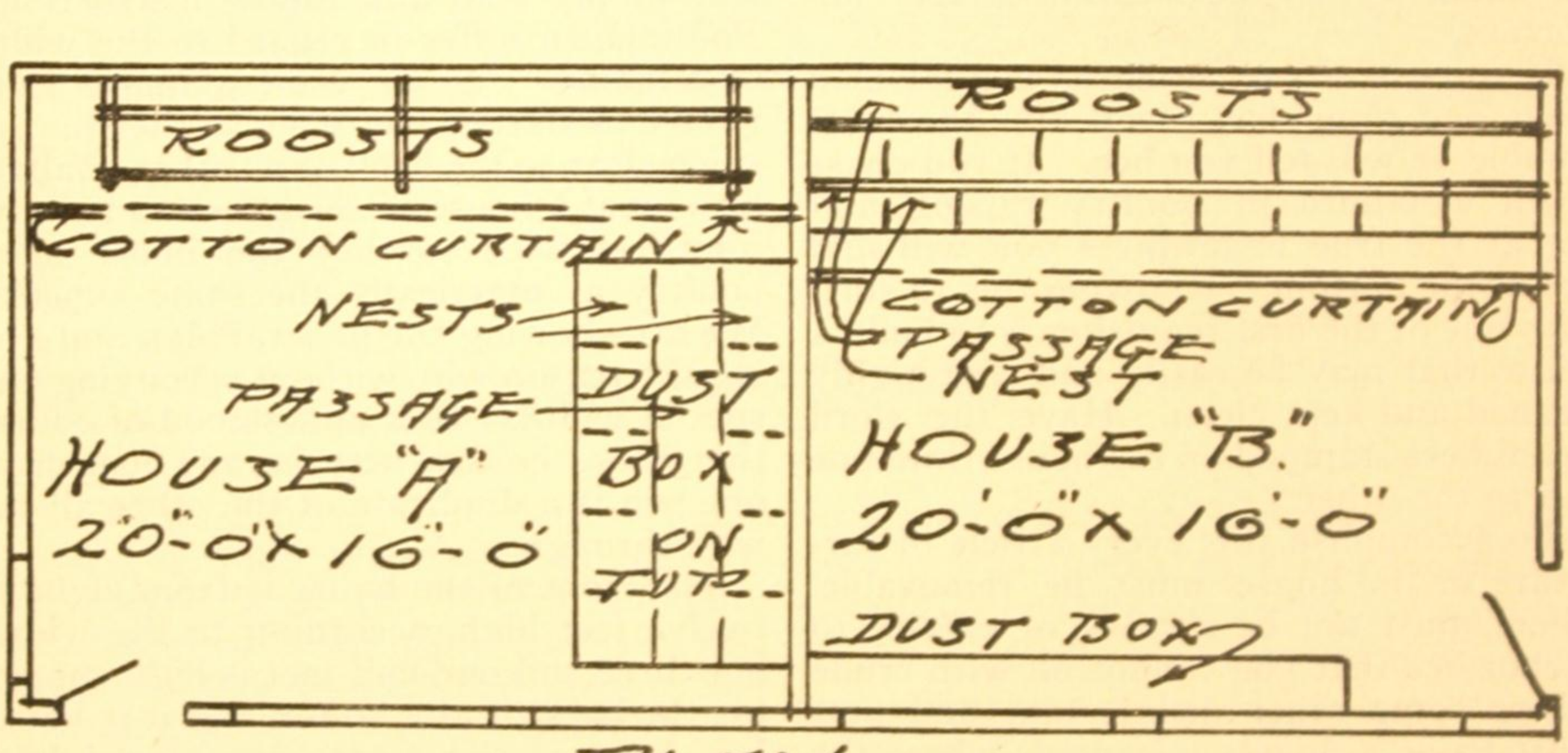
The front of the house is from eight to twelve feet high, according to the width, but three and one-half feet is high enough for the back of any house, and it is better low because the roosts are placed back here where it is warm in winter and you want a low ceiling to confine the warm air close to the fowls. You can secure ventilation by having a warm roost. The body heat of the fowls will warm the air and we all know that heated air is lighter than cold air and for this reason it will follow the slant of the roof upward and cold air will

come in from the front to gradually take its place. In this way you can get a constant change of air around the fowls without a draft.

We have windows in the high front side to admit sunlight and air. Some of the windows are covered with cotton, while remember. Fowls are warmly clothed with feathers and they will stand the cold a great deal better than bad air provided that the cold is dry, and it is understood that the poultry house is dry otherwise it is no good.

Another important feature is the kind

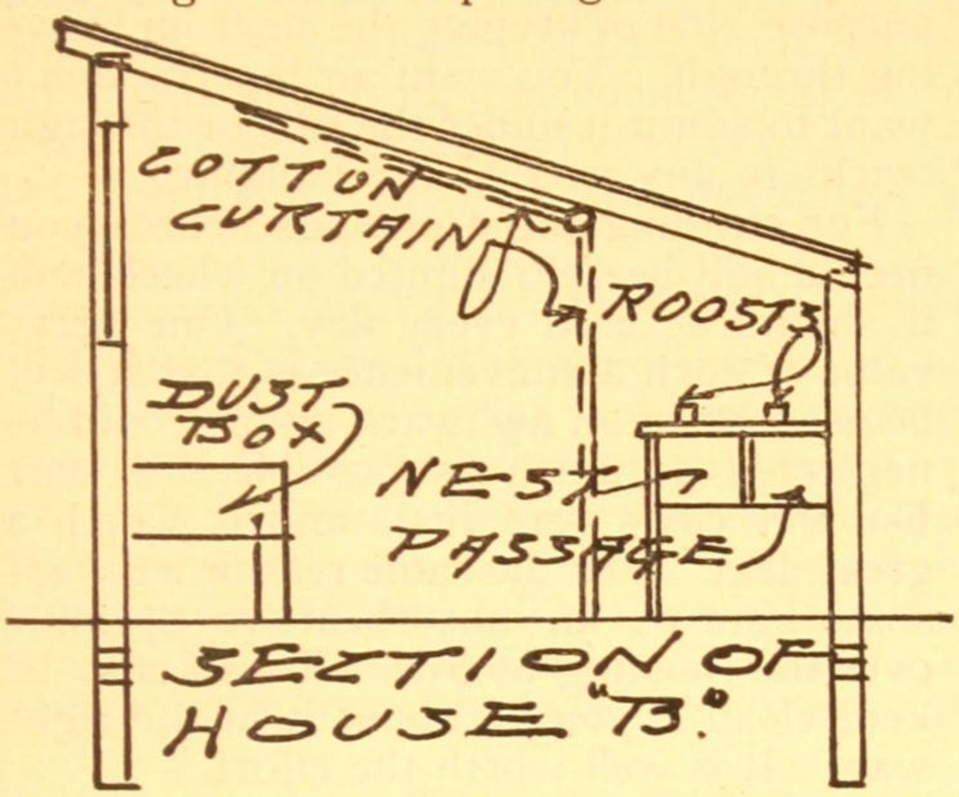




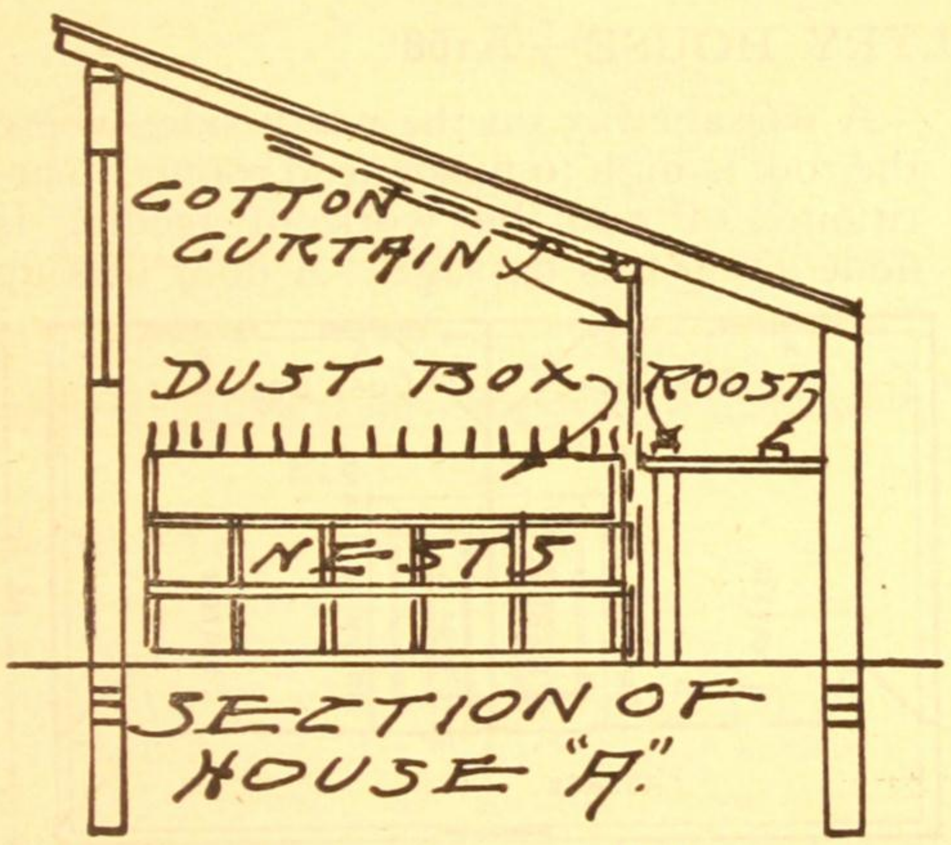
some of them are fitted with glazed sash. The extent of the cotton surface depends upon the size of the house, the number of fowls kept in a pen and the climate. In the far north you cannot have a great deal of cotton surface without making the house too cold, but right here is a point to

of cotton. Cotton does not mean canvas or thick heavy ducking, it means something that will let the air through freely. Some poultrymen say the thinner the better, but probably a cheap grade of cotton such as you buy retail for about four cents a yard will answer the purpose best. And

you want to tack the cotton on loose, leave it baggy so it may flap in the wind because every flap jars the dust loose. If the cotton is drawn tight dust will settle and clog the little openings.



SECTION OF HOUSE "B."



SECTION OF HOUSE "A."

Some poultrymen cover all the openings with cotton and have glass sashes inside that they may slide shut at night or during extremely bad weather. When the cotton ventilators are made right and kept right the air in the poultry house will be good.

In the north make no openings into the poultry house except in front, unless you have front yards to interfere. In that case make the doors in the ends right against the front corner.

For material use matched stuff with building paper either one or two thicknesses according to the degree of cold you are obliged to guard against. A good house is made with a light frame work of two by fours covered with seven-eighth matched boarding dressed smooth on one side and the smooth surface turned in. The two by fours are dressed on all sides to make them smooth. Avoid every possible roughness because it will hold dust. Dust will harbor microbes as well as lice and mites, which leads us back to one main branch of our text, cleanliness.

Have no eave projection at the back. Cover the matched boarding with tar paper commencing at the back at the ground and work up to the high part of the roof in front. Make good joints nailed down into fresh tar. Put the tar roofing paper on in such a way that it will hold standing water, then you know that neither water nor air can get through. Cover the ends of the building in the same way.

Dropping boards are placed against the back of the house fitted close against cleats to prevent draughts and hung with hooks so thev will lift up out of the way to clean the floor.

Six inches above the droppings boards are loose roosts that may be easily lifted off and carried outdoors for cleaning. The oftener they are carried out and given a heating up in the sun the better.

Some poultrymen prefer what they call nesting rooms. These may be easily made by placing two rows of nest boxes together with a passage between so built that they may be easily moved about or carried out doors. Room A shows such an arrangement. There is a large dusting box on top with wooden pins projecting to prevent roosting on the edge of it. In room B the dust box is built on legs so it stands up eighteen inches to two feet above the floor. This leaves the ground space clear for litter for scratching and keeps the contents of the boxes free of straw and trash so the hens can dust themselves better. Then a box elevated a little catches the sunlight through a window to better advantage.

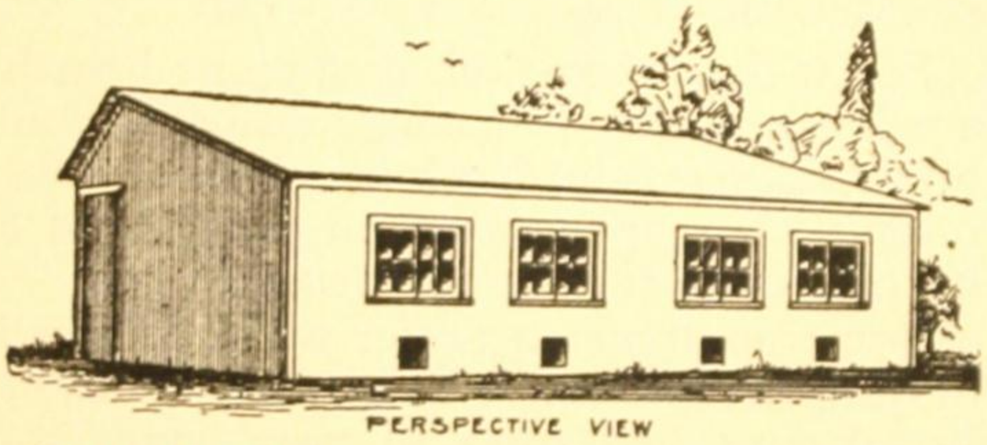
Hens love to dust themselves in the sun in winter time. If the boxes are large enough to hold three or four hens at once it is all the better because it fosters a sort of hen sociability. If you watch them at such times you will notice that they apparently talk together and enjoy a little hen gossip among themselves. It is only by studying the habits of poultry that we can get at the proper management. Poultry management to be successful depends on little things and there are a great many of them.

This house may be built directly on the ground, or it may have a cement or stone wall under it. The floor inside may be earth or cement, but never of wood. Earth is the best, cement is rat proof, but no matter what the floor is you must have the sills so imbedded that there will be no draft. This may be done in a dozen different ways. Perhaps the simplest is to nail a board on the sill that reaches down into the ground eight or ten inches. There is no hard and fast rule for the way in which it is done so long as you accomplish the purpose, that of keeping the air from blowing through. You want air but you don't want to admit it under the sills or through cracks in any part of the building.

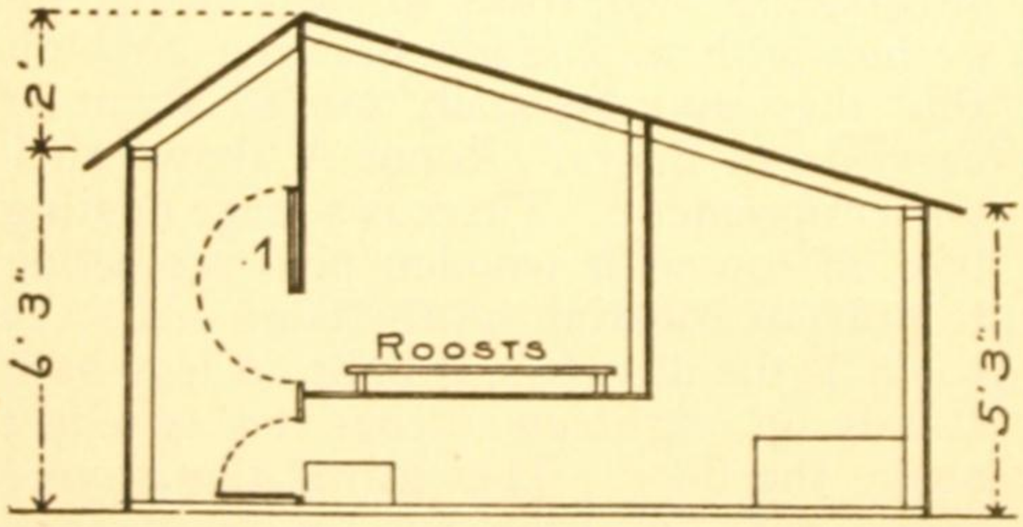
For cleaning the droppings boards you need a half barrel mounted on wheels and it should be used every day. One great value of such a convenience is that it will be used when an awkward affair would be neglected as much as possible. A cart like this costs very little and is worth a great deal. For the same reason we want some kind of an absorbent to sprinkle over the roosting boards. Roosts may be kept clean if you go about it in the right way. It is well worth the effort.

PRACTICAL POULTRY HOUSE—A168

A single section of a two-pen poultry house fourteen by twenty-four feet is given in this plan. The house of course may be any length by adding any number



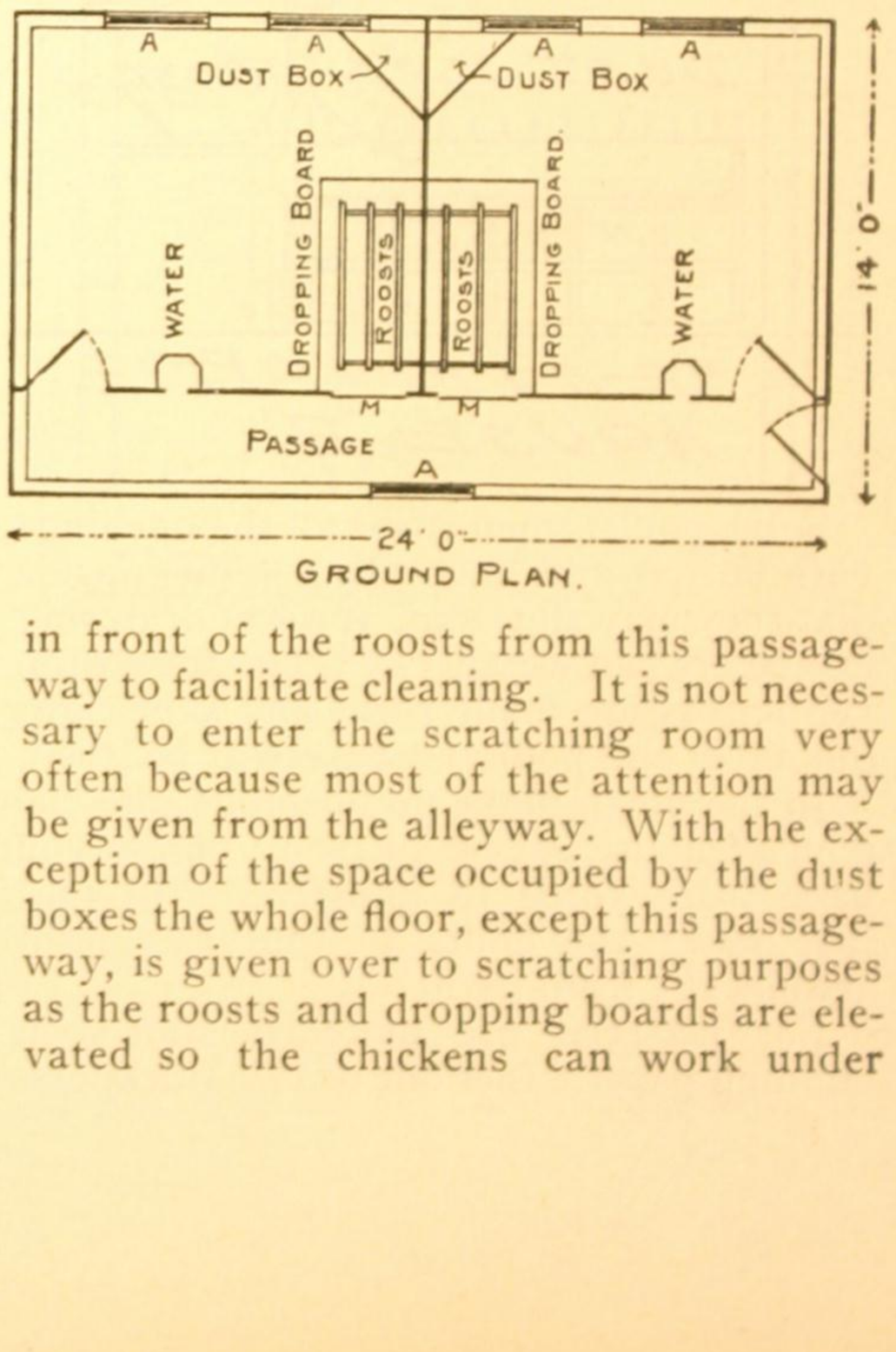
PERSPECTIVE VIEW



SECTION.

of twenty-four foot sections. It is placed so that the windows look to the south to gather all the sunlight possible.

A passageway on the north side, where the roof is high to make head room, is partitioned off and the work of feeding is done along this passage. A door lifts up



GROUND PLAN.

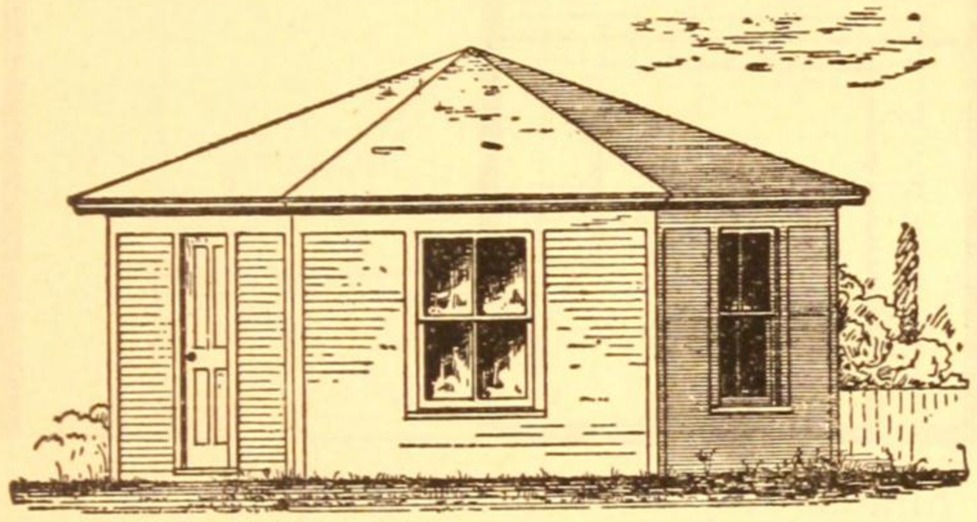
in front of the roosts from this passageway to facilitate cleaning. It is not necessary to enter the scratching room very often because most of the attention may be given from the alleyway. With the exception of the space occupied by the dust boxes the whole floor, except this passageway, is given over to scratching purposes as the roosts and dropping boards are elevated so the chickens can work under

them. A section of this house will accommodate from twenty to thirty birds according to size.

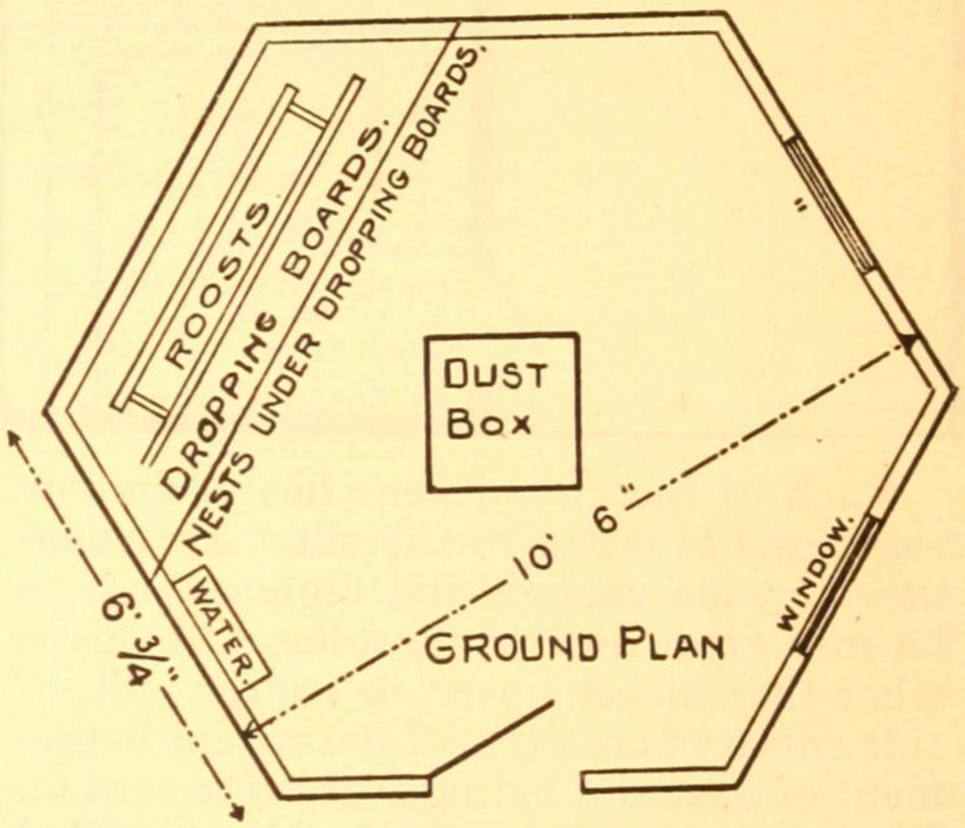
Poultry men argue by the hour about the necessity of an alleyway. There are many different opinions. Some think an alleyway is worth all the room it takes up just to prevent annoying the fowls, when feeding by going in and out from amongst them. Other poultry men think that chickens ought to be tame enough to pay very little attention to the feeder when he goes about his work, but it is generally noticeable that a hen makes quite a fuss when she thinks she is about to be cornered. This applies to hens that are ordinarily tame, as well as those that are ordinarily wild.

HEXAGONAL POULTRY HOUSE—174

The house shown is in the shape of a hexagon and makes a very handosme and convenient house, and is just the thing for the city lot where space is limited. The ground or floor plan will show you the interior arrangement. The size of this house is ten feet six inches, and each of the sides is six feet three-quarters inch in length. The corner posts are six feet long and the center of the house nine feet from floor to peak of roof. The house should be built with one window facing directly south and the other facing southeast, thus allowing an abundance of sunlight to enter the building in the morning, when it is most needed.



ELEVATION.



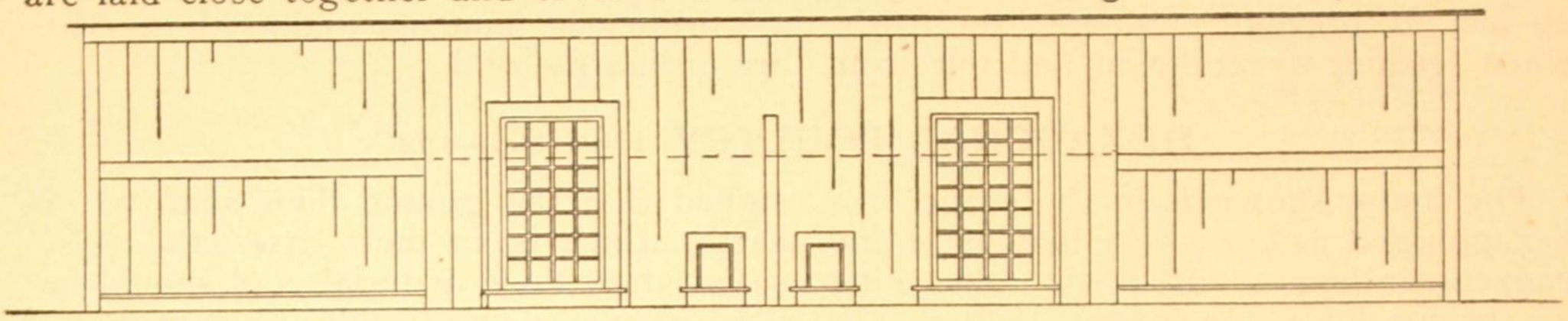
In nearly all the plans given it is designed that the ground floor shall be of earth, which is, in most cases, the most satisfactory floor material, and should be used whenever practicable. Cement floors are also good, however; where they are used the poultry house will generally present a more attractive appearance and can be kept cleaner, with less labor, than a house having earth or wooden floors. Wooden floors should not be used if they can be avoided.

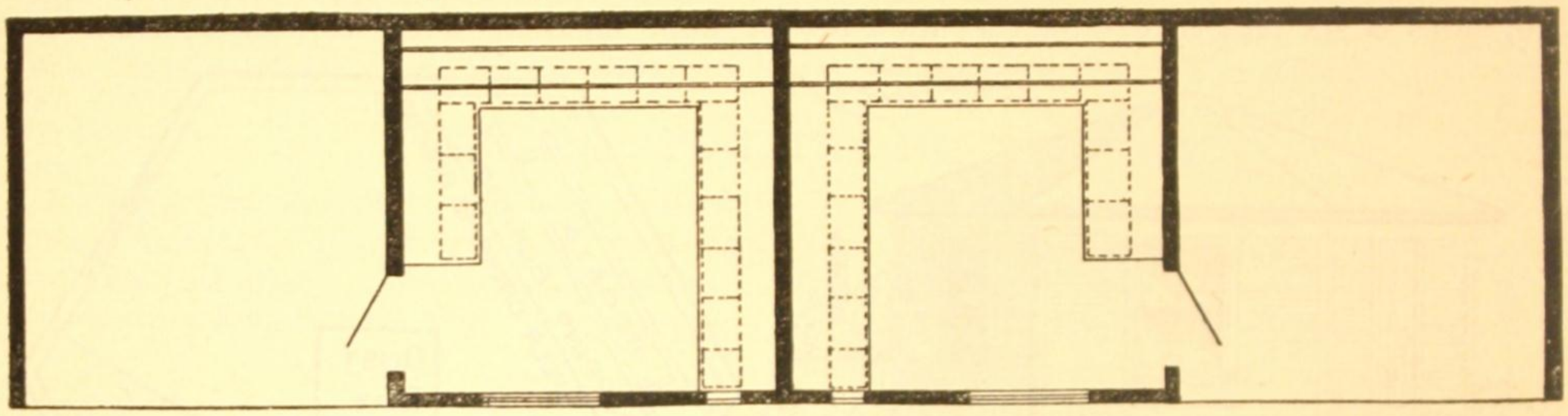
OPEN FRONT POULTRY HOUSE—A110

The modification of the popular open front poultry house is given in this plan. It is suitable for two lots of hens of forty or fifty each, according to the size of the breed. The house is forty feet long and ten feet wide, divided into two compartments. Each compartment has a warm room and scratching shed which is open to the south. This makes each room ten feet square with a roof eight feet high in front and four feet at the back. No room is taken up in hallways or passageways but the doors entering the warm rooms open from the scratching sheds.

Very light material is used in the construction of this house. Sills are four by

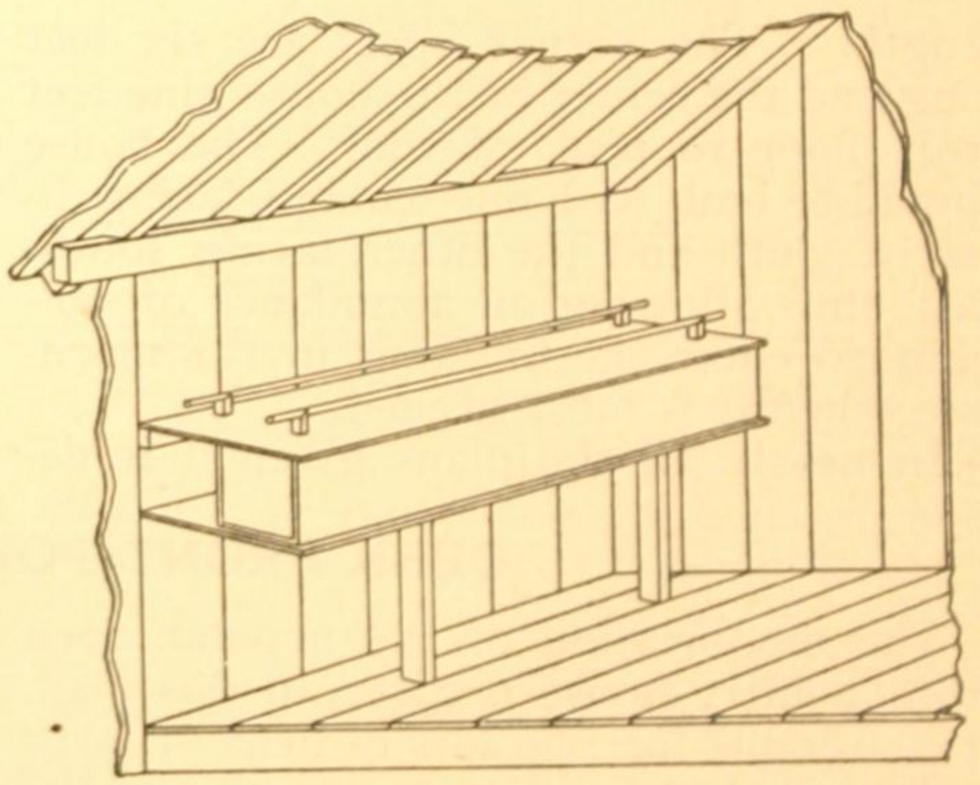
six inches, and two by fours are used for rafters. Common lumber is used for boarding,which is covered on the outside with building paper and the building paper is covered with thin matched sheathing. For the roof common sheathing boards are laid close together and covered with tarred paper and the paper covered with shingles. This makes a warm roof which is very essential to a poultry house.





Each of the closed pens has a window that reaches down to the sill. This window is wide enough and high enough to let in a great deal of sunshine, and this is what the chickens need in winter. All inside surfaces are dressed to prevent lodgement of dust and hiding places for vermin. The whole bottom of the building is filled in several inches deep with grout mortar. In the warm rooms the floor joists are embedded in the soft mortar and a matched floor laid on. A floor like this is dry and easily cleaned and it is impossible for rats to work their way up through it. There is no wooden floor in the scratching sheds. The grout filling is supposed to be covered with straw a foot or so in depth. The hens will work in this straw even in the coldest days, but of course it is a good plan to have a liberal supply of straw in the warm room for amusement night and morning.

For nest boxes the arrangement given in this plan is very satisfactory. It shows a roosting platform with a row of nests underneath. For leghorns or similar fowls twelve inches square and seven or eight inches high is large enough for the nest boxes, but for brahmas or cochins two or three inches larger each way are much better. To facilitate cleaning the dropping board and nest boxes lift off from the lower platform. The lower platform is hinged and may be dropped down or unhooked and the whole thing carried out-



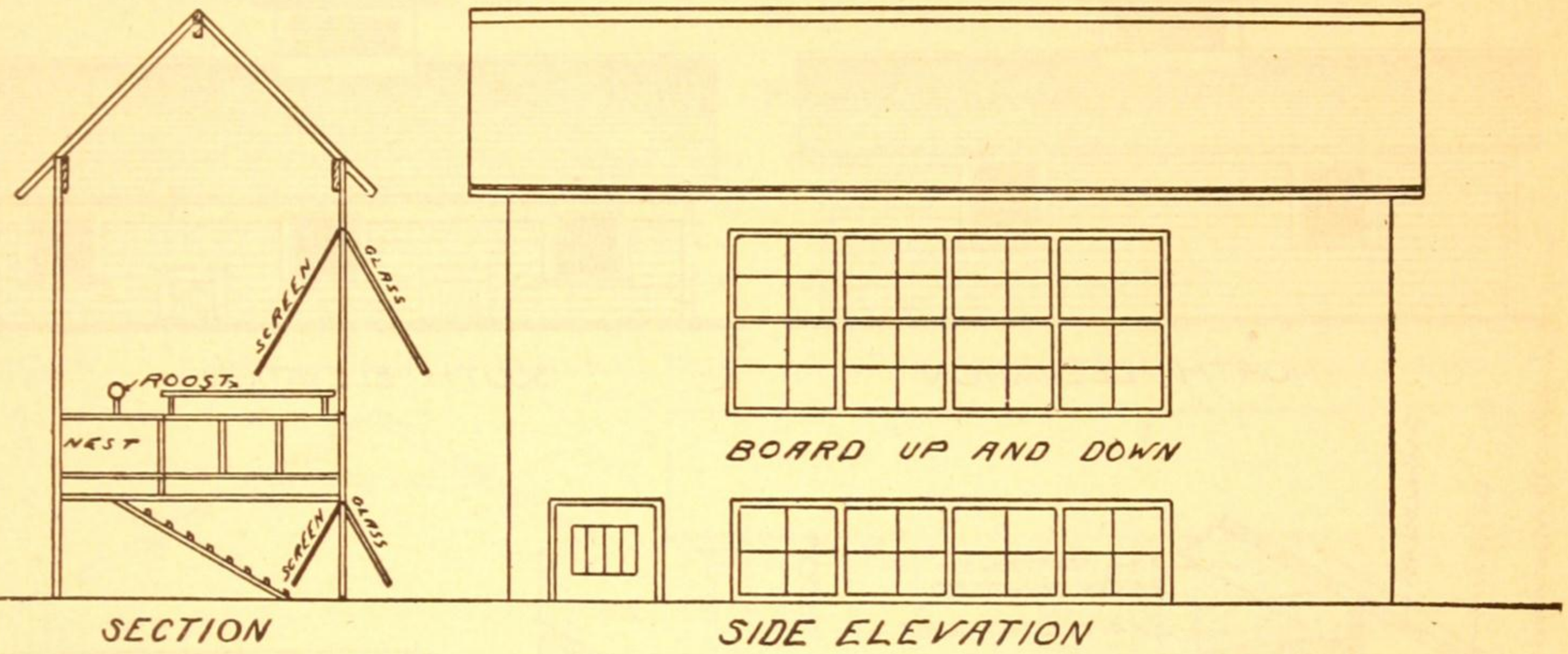
doors. It is very important to have roosting poles, dropping board and nest boxes loose. A great deal of trouble has come from vermin getting into these places

without having facilities to eradicate them easily.

Hens seldom form the egg eating habit if the nests are dark. This is why the boxes open from the back under cover. The dropping board is not fastened to the nest boxes in any way. When gathering the eggs it may be lifted easily.

SMALL POULTRY HOUSE—A153

A little two story poultry house that looks like a plaything is shown in plan (A153), but this house is all right as far as it goes. It is especially valuable for a boy who would like to start in the poultry business but cannot afford a more expensive house. This little house is four feet wide and twelve feet long with a scratching shed the full size on the ground under the floor. This space underneath is two feet high and the windows should extend well across the front side.

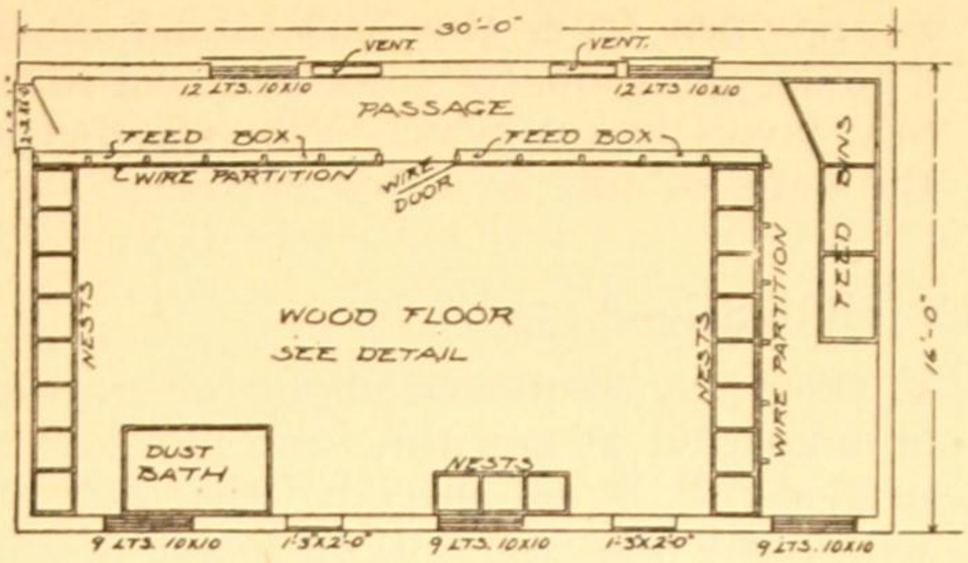


A runway for the chickens to get up and down the stairs is made by sawing off one wide floor board and hinging it in such a way as to let one end drop to the ground. When this is raised up it fits the opening in the floor and it should be fitted with jambs to keep the cold from coming through the cracks.

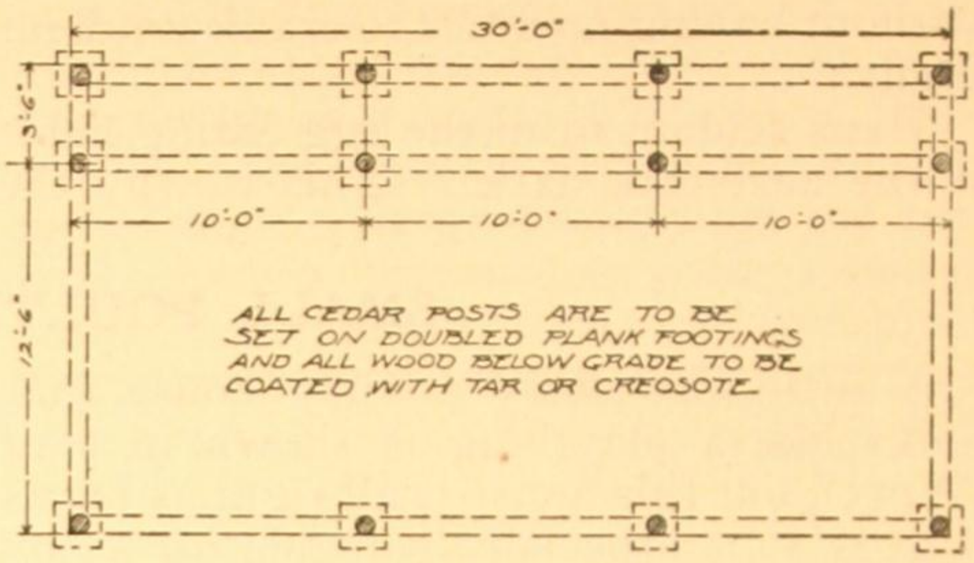
The nest boxes and roosts are loose so they may be moved about for cleaning or taken out at any time and put back as needed. It is not intended that any one will find it necessary to go inside this little house. The work is all done through the windows. The inner screens may be rigged with cords and pulleys to hold them up and the outside windows may be held up by braces from the building. To gather the eggs, clean out the house, or for feeding, one of the windows is raised and the screen pulled back with a cord. The chickens may be driven down stairs or upstairs during the operation. The screens may be of wire or cotton, or both. Cotton is the best because the window can be then left open and the chickens will get plenty of fresh air without a draught. On farms where considerable poultry is kept one of these little houses would be found useful occasionally to keep some breed separate.

DUCK HOUSE—A98

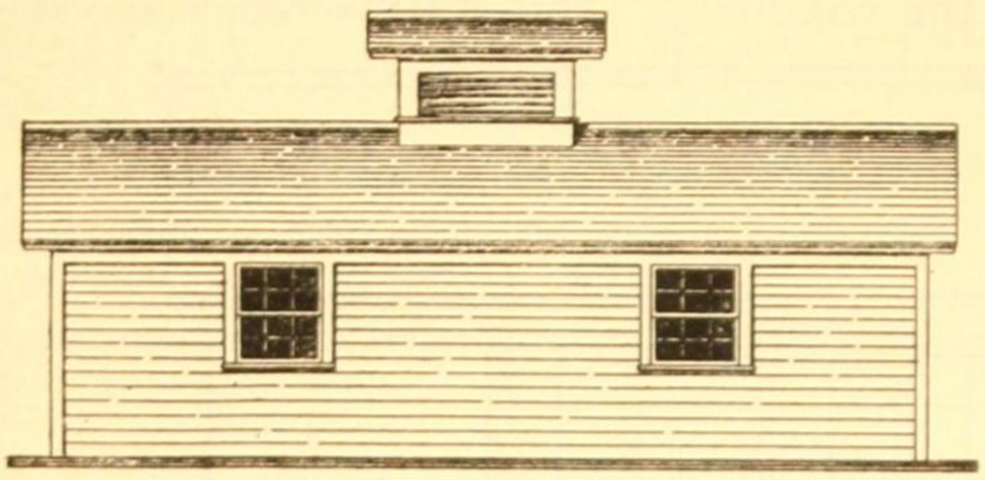
A house designed for the housing of thoroughbred ducks is given in plan (A98). It is built up from the ground on cedar posts set on blocks to prevent settling. The idea is to have a damp proof house with the best possible ventilation.



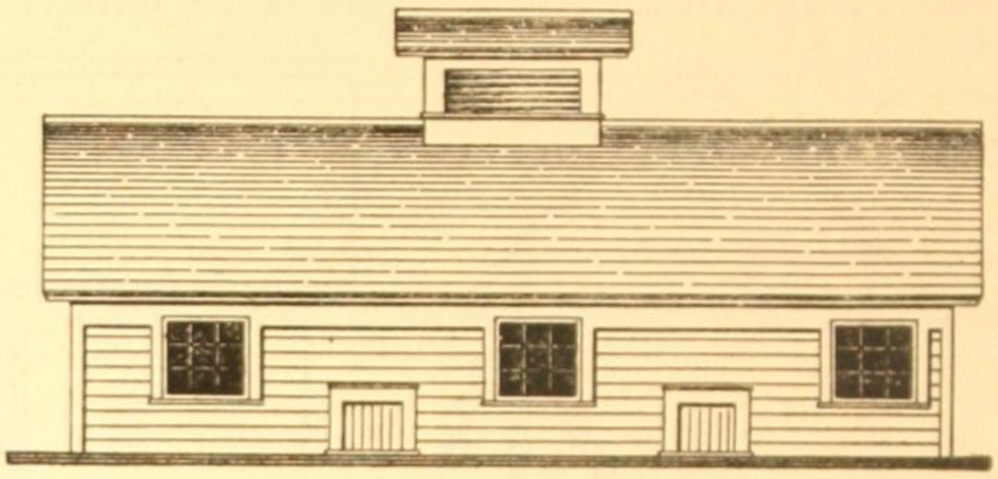
FLOOR PLAN



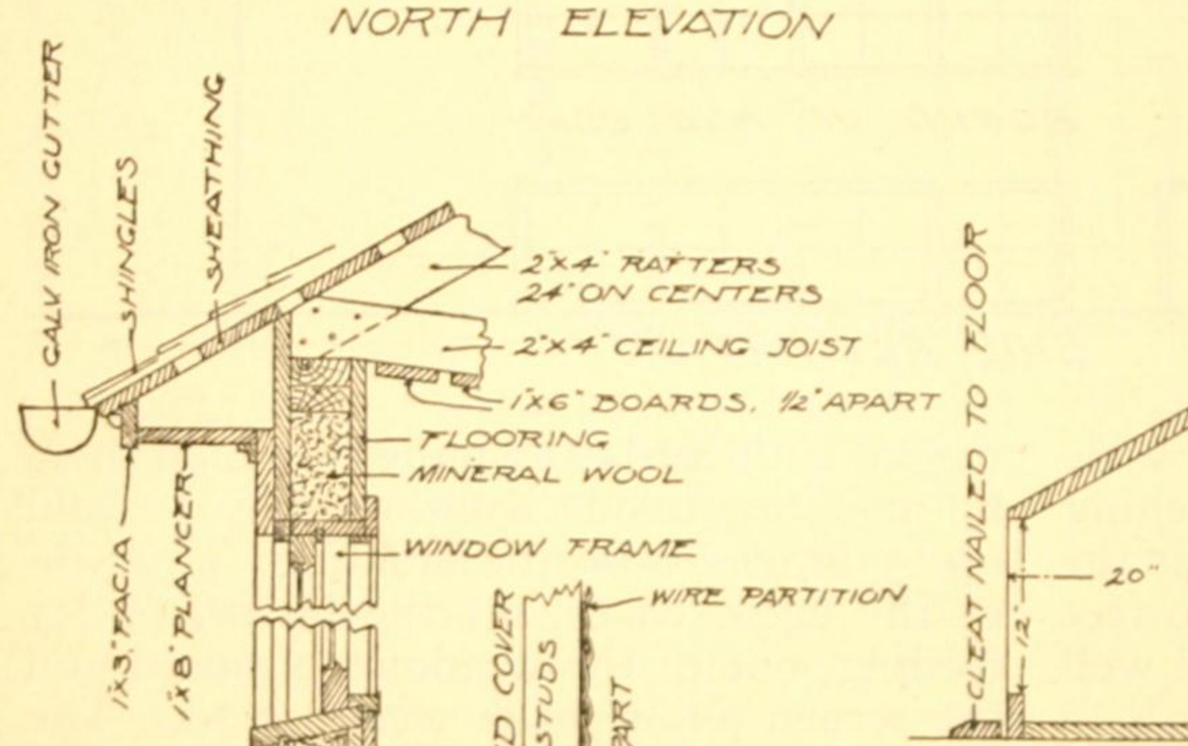
FOUNDATION PLAN

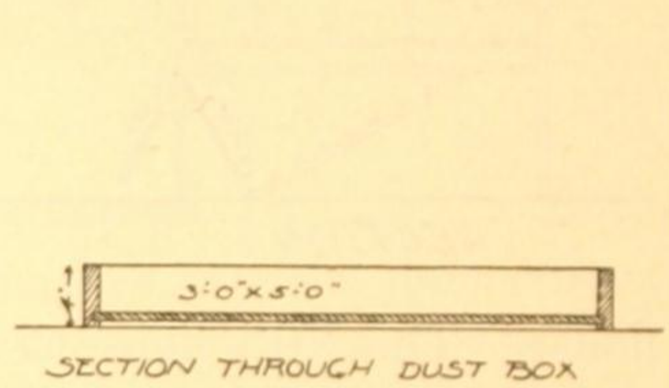


NORTH ELEVATION



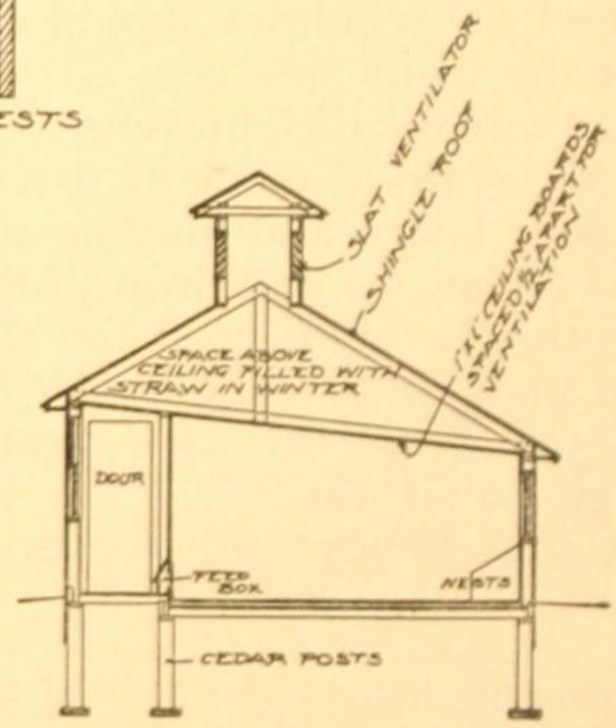
SOUTH ELEVATION





SECTION THROUGH NESTS

SECTION THROUGH DUST BOX



CROSS SECTION

The building is sixteen by thirty feet and contains one general room with a passage, which is also a storeroom for feed, along one side and across one end. All the principal construction details are fully shown in the detail drawings.

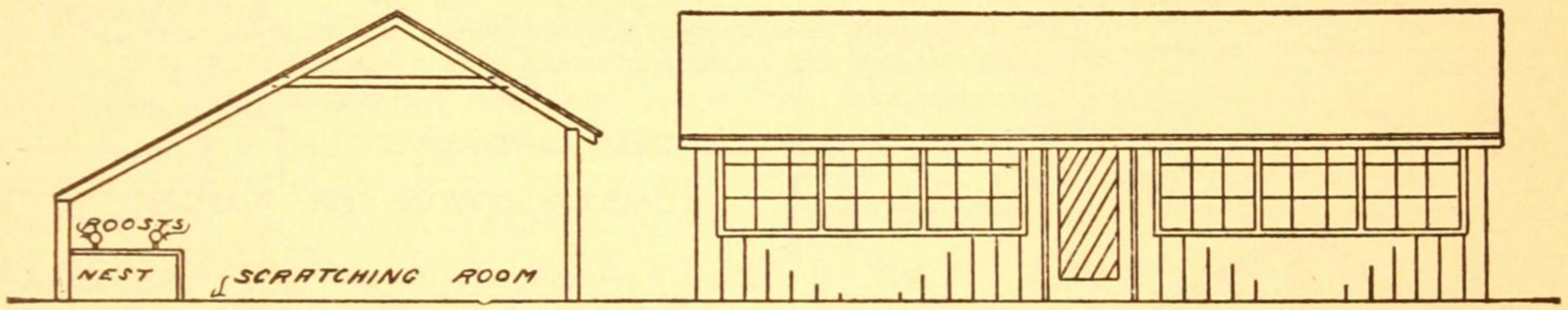
The house is built principally of two by fours as it is not very large and heavier timber is not necessary. The especial features are the filling of mineral wool in the partitions for warmth and a slatted ceiling with straw overhead for ventilation without drafts and without letting in an unnecessary amount of cold air.

This style of a building is somewhat expensive but it is very satisfactory when finished. It is usually considered that any kind of an old shed will do for ducks. In most cases any kind of an old shed is made to answer the purpose, but there is money in the better breeds and to get results it is necessary to keep even ducks with some idea of comfort. Some of the improved varieties bring fancy prices for eggs and young breeding stock, but like other thoroughbred animals fancy ducks need a little more attention than little old scrubs that most of us are accustomed to.

DOUBLE POULTRY HOUSE—A154

A small double poultry house is shown in plan (A154). It is twenty-four feet long and sixteen feet wide, giving a space of sixteen by twelve feet to each compartment. It is very simple and it is also cheap and durable. It may be built of matched stuff with the smooth side turned in, or it may be constructed of rough lumber. Of course matched stuff is very much the best as it leaves no harbor for vermin and no lodgment for dust. In either case the building is covered outside with tarred paper. The paper is started, in strips, from the eaves in front, carried over the peak and clear down to the ground at the back.

Inside, the house is practically all one room, but a roost curtain may be hung with a roller to pull down at night or the cotton may be tacked on a hinged frame to let down at night, also one or more of the windows may be left open and the spaces covered with cotton.



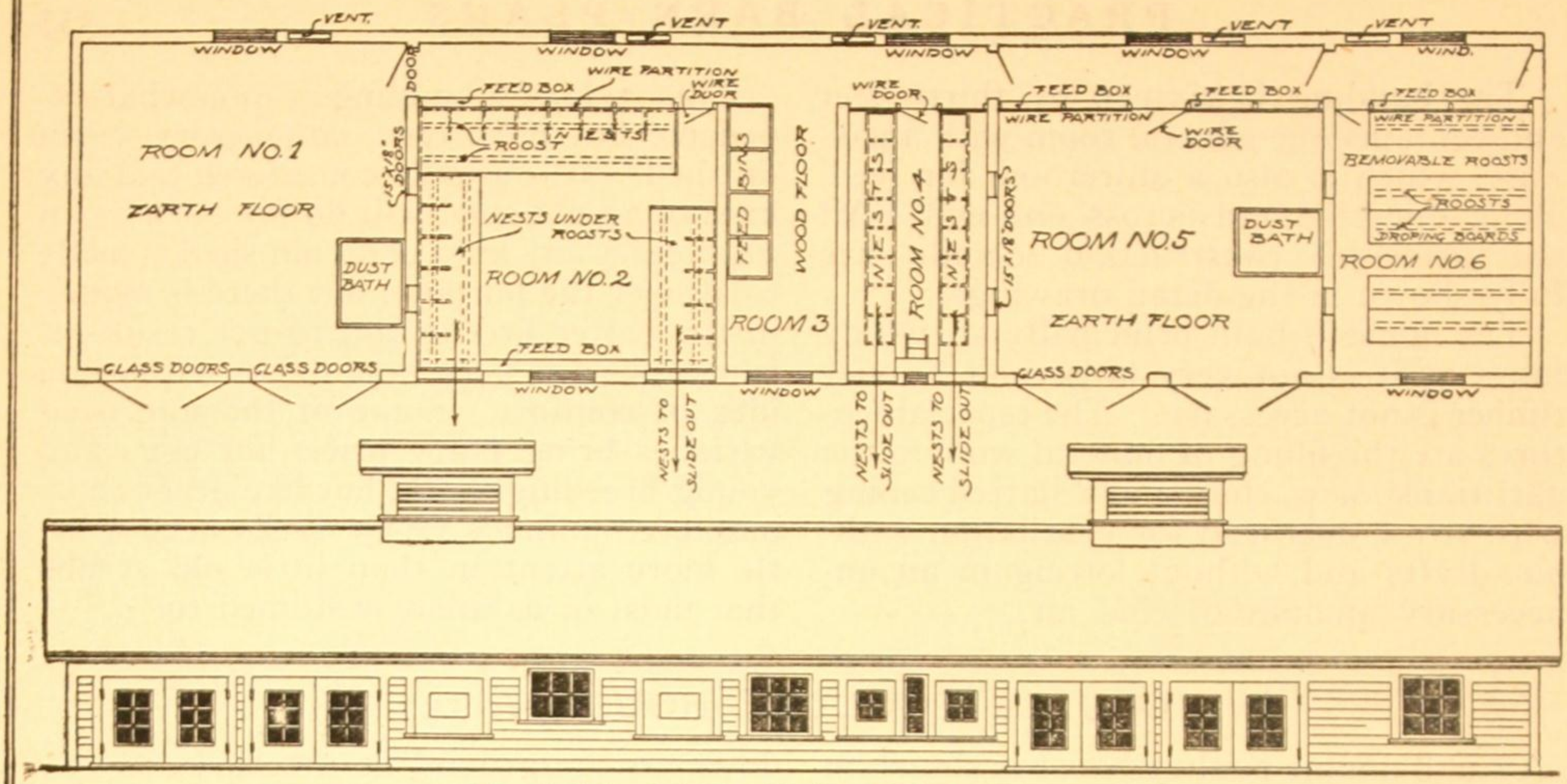
POULTRY HOUSE

Against the back wall is the droppings board with the roosts above it and the nest boxes underneath. All this furnishing is made removable so far as possible for easy cleaning. The apron board in front of the nest boxes lifts out in sections.

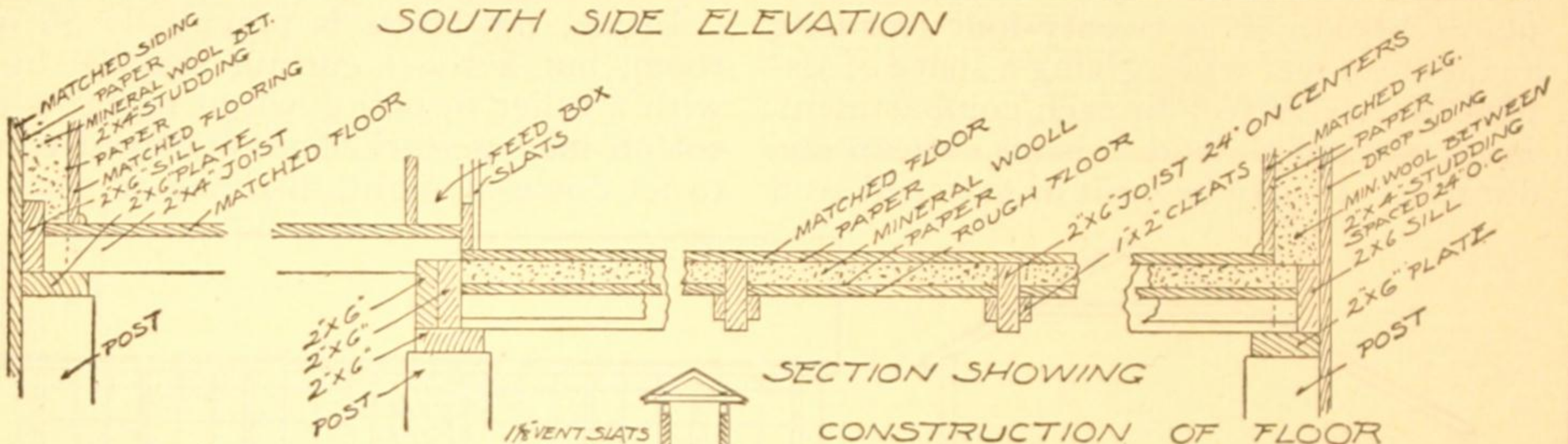
MODEL CHICKEN HOUSE—A173

This building is 68 feet long and 16 feet wide, built on a post foundation, which is enclosed with planking covered with galvanized wire cloth to a depth of about two feet below the ground, to check the tunneling of rats, etc.

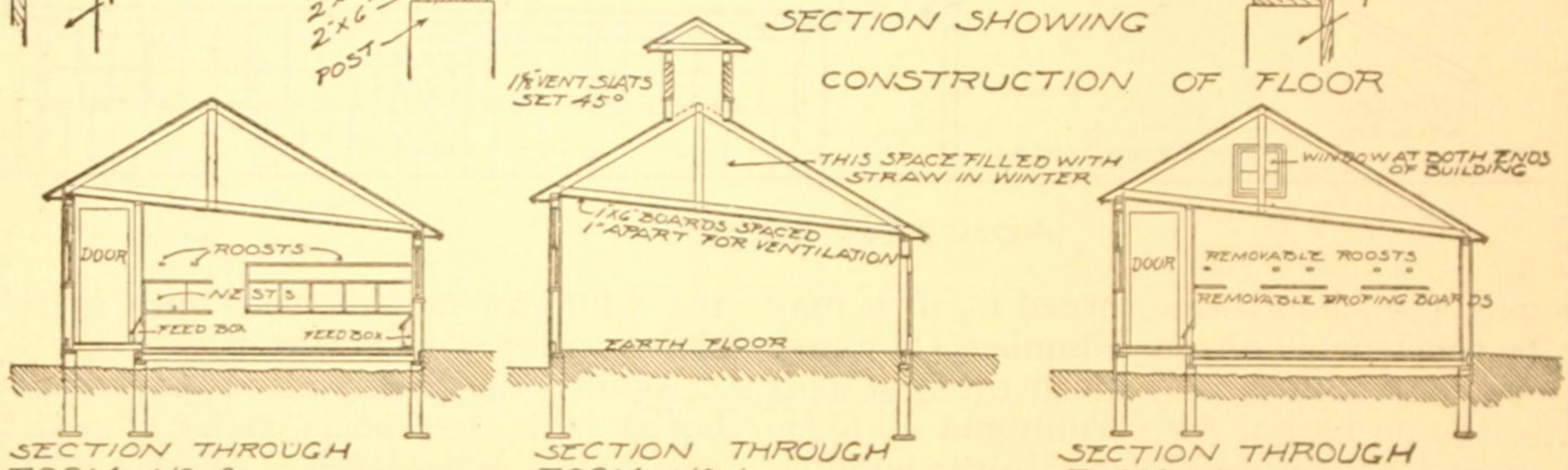
Almost every lover of poultry has his own ideas as to how the model chicken house should be arranged and constructed, and every chicken house that is not thus constructed may meet with his severe criticism. We will, therefore, not lay stress on any one particular feature of this building but will say that several different ideas



SOUTH SIDE ELEVATION



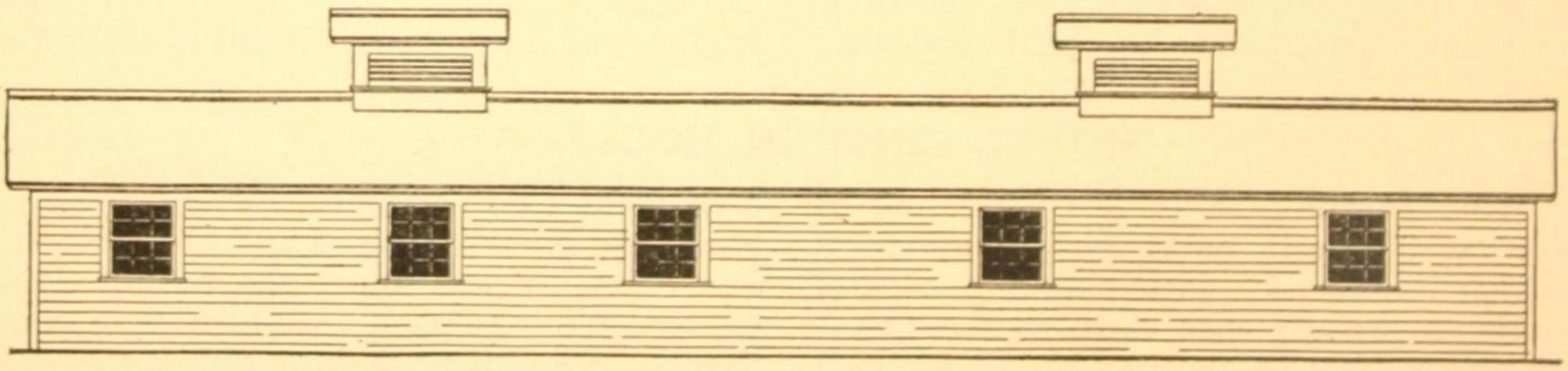
SECTION SHOWING CONSTRUCTION OF FLOOR



SECTION THROUGH ROOM NO. 2

SECTION THROUGH ROOM NO. 1

SECTION THROUGH ROOM NO. 6



NORTH SIDE ELEVATION

DESIGN OF CHICKEN HOUSE

have been used which may be explained as follows:

Rooms Nos. 1 and 2 (see floor plan) are used together; room 1 being the scratching room which is used in stormy and winter weather for exercise, and room No. 2 is the feed, nest and roost room.

The roosts are placed above the nests which have a cover, or roof, pitched so the chickens cannot roost on the nest, but are compelled to get on the roost above. The nests are open in front, having a passage for the chickens, running the full length of each section. The nest sections are removable through doors opposite each section, so they can be easily cleaned and aired; they set on a rack which elevates them about twenty inches above the floor, so the chickens can walk below them where the feed troughs are located, as shown in the section through room No. 2.

Room No. 3 is a feed room, 5 feet wide, which contains feed bins for grain, meal, etc. To the right (east) of this feed room are rooms 4, 5 and 6. In this scheme, the nest room, 4, is separated from the roost room, 6, one being to the west and the other to the east of the scratching rooms. This may have several advantages over the idea of room 1 and 2 where the chickens roost and lay in the same room, but it also has some disadvantages, one of which is that a larger building is required for the same number of fowls.

The nests of room 4 are so constructed that each nest can be taken out separately, or each entire section can be taken out through doors the same as in room 2. In place of the chicken being in view while on the nest, in room 4 the opening of the nests face the wall, having a dark passage for the chickens. By being out of view they are not frightened while the eggs are being gathered, which is done through a small round hand-hole through the back of the nest. This is covered by a small wooden shutter loosely screwed on over the hand-hole so it will always hang closed. Feed boxes similar to those in room 2, are located along the hallway.

Rooms 1 and 5 have earth floors and boxes filled with dust, for dust baths. All other floors are constructed double, with two inches of mineral wool between them for warmth, as shown in the section. All side walls of the building have heavy building paper both inside and outside of the studding, and the space between is also filled with mineral wool.

The space between the ceiling and roof is filled with straw during the winter months, and the ceiling boards are spaced half an inch apart to allow a free circulation of air through the ceiling and straw. This is brought about by having windows at each end of the building, which are controlled by cords. All windows on the north have storm sash for winter. Ventilation shafts are built in the north wall, with side shutters for admitting fresh air and exhausting foul air in winter, when all windows are kept closed.

SCRATCHING SHED POULTRY HOUSE—A151

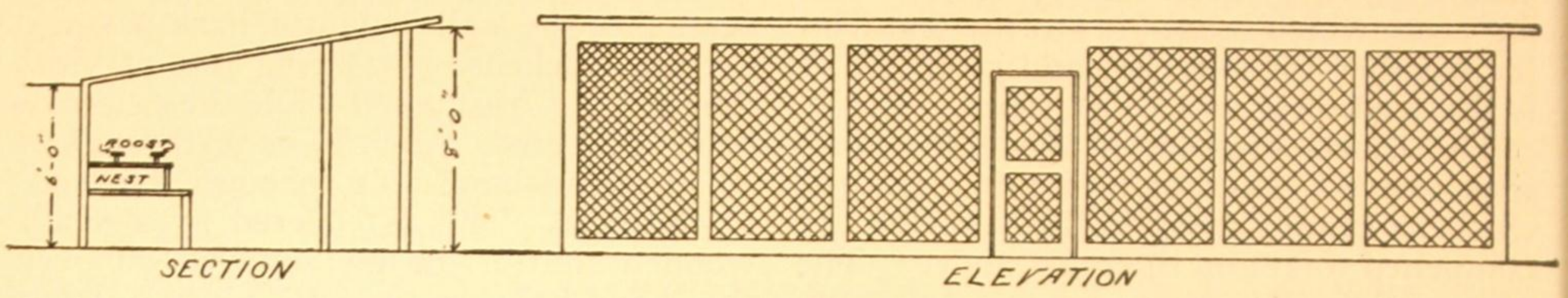
A poultry house with an open scratching shed is shown in plan (A151). The house is thirty-four feet long by twelve in width. Poultry men differ about the width of a house constructed in this manner. Some prefer twelve feet because it is easier to get the sunlight clear to the back, as these houses should always front the south. On the other hand men with considerable experience prefer houses sixteen or even twenty feet in width because they can house more fowls for practically the same amount of money.

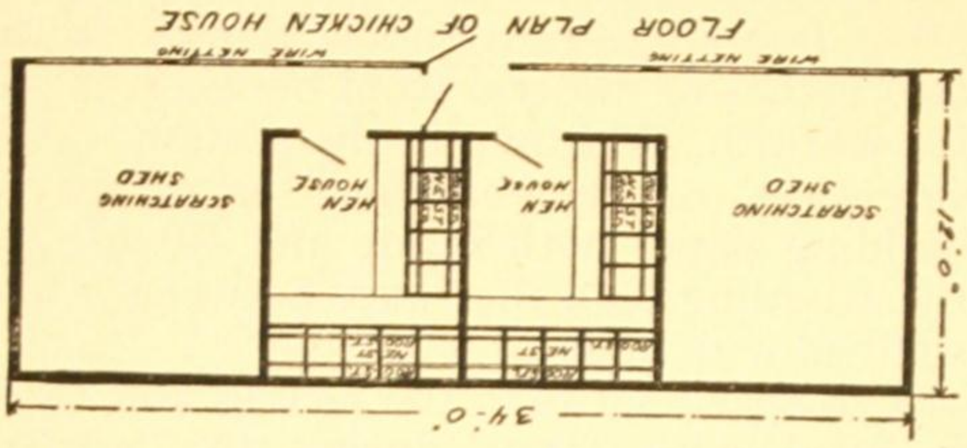
There are many ways of building an open scratching shed and poultry house, but this plan seems to contain about everything that is necessary. The door opening into the hen-house is just a frame covered with cotton which admits both light and air to the roosts and nest boxes. The outside wire netting may be covered with cotton or not according to the climate and the ideas of the owner.

The roofing is tarred paper and it starts at the highest point in front, turns over the upper corner at the back and goes clear

down to the ground. This makes a thoroughly wind proof and damp proof house.

It is a peculiar thing about the dampness in poultry houses. It is a comparatively simple question that has bothered poultry men more than anything else.



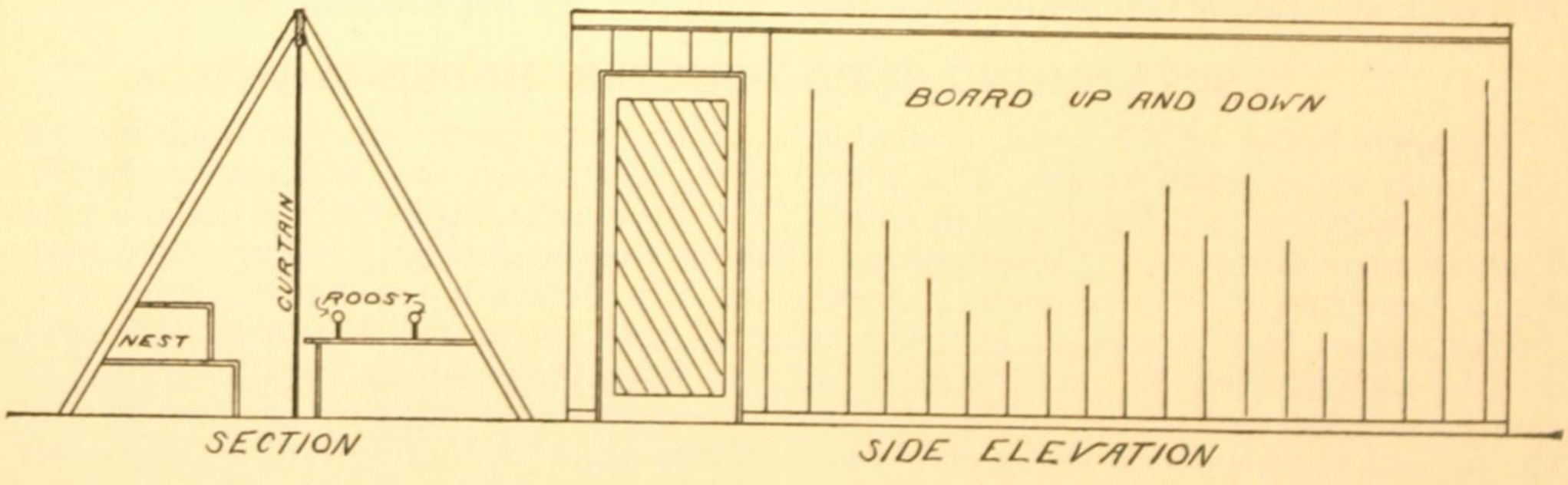


Why a poultry house should gather dampness and have white frost on the inside when all the stables on the farm are comparatively dry has bothered more men than anything else in the poultry line. It is easier to build a satisfactory stable for any other domestic animal than it is for chickens unless we are satisfied with what is commonly termed a curtain front house. The phrase curtain front simply means that some of the openings are covered with thin cotton instead of glass. It seems to have solved the problem of how to make a chicken house light, airy and dry, but not all curtain front houses work alike. A great deal depends on the head room. A few hens have not body warmth enough to heat a great deal of space. You cannot have good ventilation without heat. The solution seems to be to build a comparatively small house with a low roof. Some poultry men build their curtain front houses as low as two feet at the back and only about six or seven feet high in front.

AN A-SHAPED POULTRY HOUSE—A152

An A shaped poultry house is given in plan (A152). This is the cheapest way to build a poultry house. You don't have to build a roof or if you build a roof you don't have to build sides. You can do either way you choose.

It is divided lengthwise with a curtain partition. This curtain is in four foot sections and it rolls up on heavy window shade rollers, so that it may be pulled down cold nights to make a warm roosting place. The material of the curtain is cheap

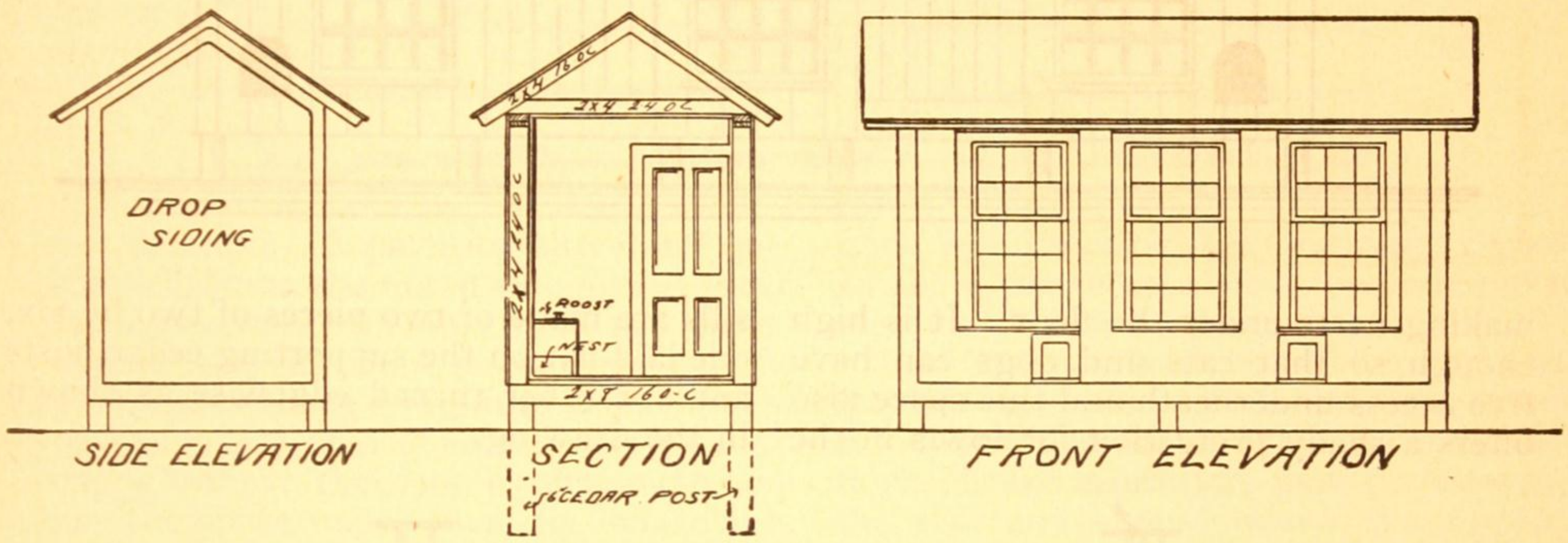


cotton costing three or four cents per yard. The sections are divided by two by four posts reaching from the floor to the ridge pole and made flush on the curtain side. You attach the roller to the ridge pole so the curtain rolls up on the inside of the roller which brings it close to the woodwork.

The house shown in the plan is eight feet wide and sixteen feet long. One end of this building is supposed to front the south. There is a small door in this end for the chickens to go in and out and the window is as big as possible. The entrance door is at the side and it should be near the south end. It is bad plan to have doors, windows or any openings in the north end or north side of a poultry house.

SMALL CHICKEN HOUSE—A119

A very neat little chicken house is shown in plan (A119). In size it is only 7x16 feet but it makes comfortable quarters for 15 or 20 hens. It is set on posts a foot

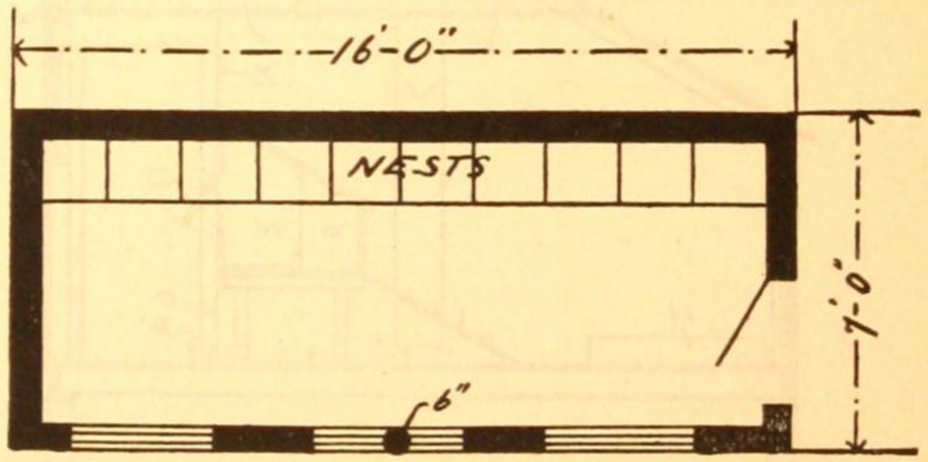


or two from the ground to be out of the way of rats.

The floor is made warm by having it double boarded with a thickness of building paper between. The large windows of course face the south and the dust boxes are placed immediately in front of them because that is the way biddy likes to take a dust bath. She wants it directly in the sunlight if possible.

It is not necessary or desirable to go into a little house like this very often. It is so small that the presence of an attendant frightens the hens and causes a disagreeable commotion. By proper management, however, they can usually be let out into the yard when the presence of an attendant in the house becomes necessary. The roosts are placed over the nest boxes and the entrance to the nest boxes is in the rear. The nest box cover, which also is the dropping board, is loose and may be easily taken out through the door for cleaning. The roosts also are loose and may be removed easily.

This is just the kind of a house to start a boy in the poultry business. Boys take more interest in a small poultry house than they do in a house full size.

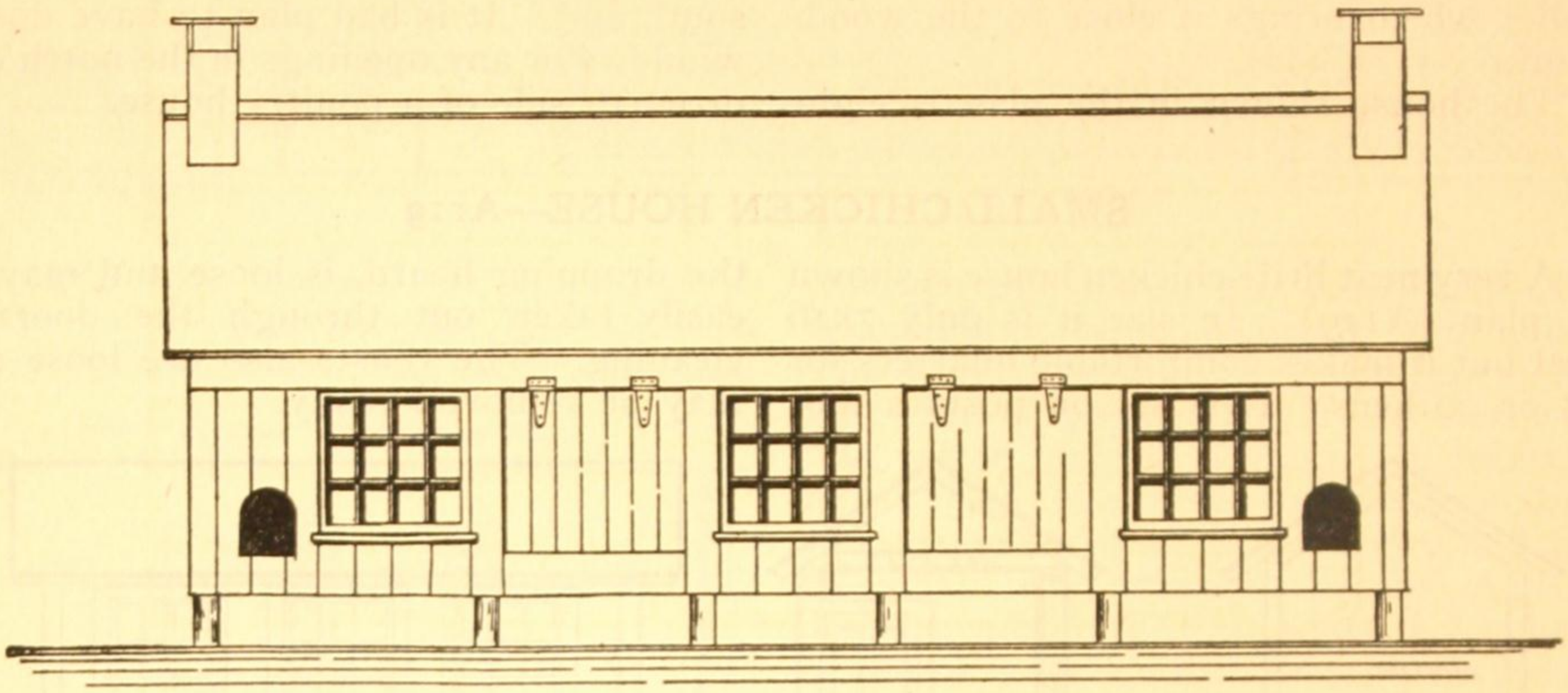


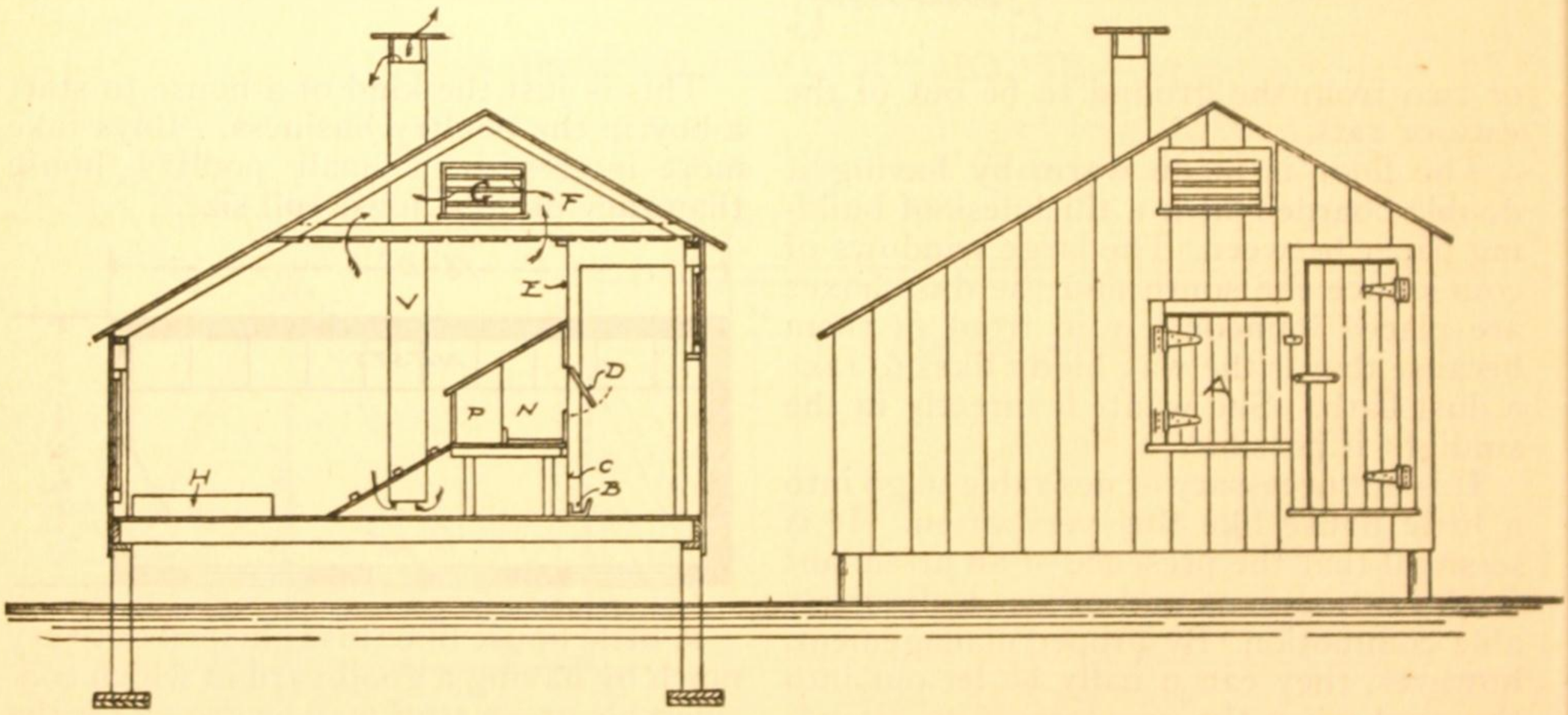
A little house like this is helped out very much by having a good yard in which considerable green stuff may be grown for the fowls to pick at. By planting a little grain and a variety of vegetables, the poultry will pick up a good deal of feed and the fowls will be more healthy because of it.

ELEVATED CHICKEN HOUSE—A165

This plan elevates the poultry house about fourteen inches above the ground for the purpose of preventing rats from making nests under the floor. It is high enough so that cats and dogs can have free access underneath and this space also offers a shady protection for fowls in the summer time. At the approach of cold weather in the fall this space is boarded up and manure is banked against the boarding to keep out the cold. If horse manure is used considerable heat may be generated.

As the building is not very heavy the sills are made of two pieces of two by six, one laid flat on the supporting cedar posts and the other turned edgewise as shown in the drawing.

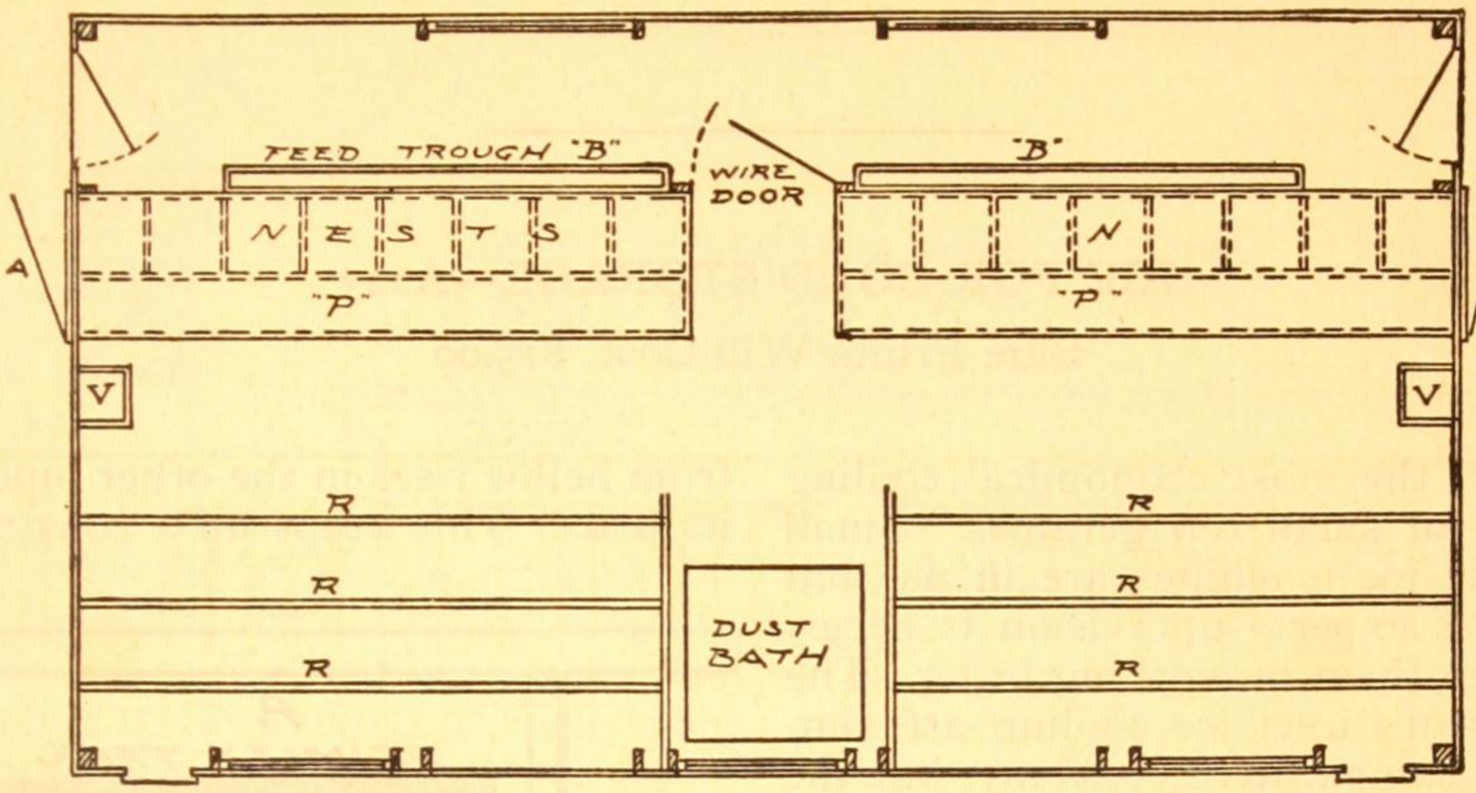




The south side of the building is only four feet high above the floor and the windows are placed well down. This has the advantage in the winter time of letting the

sun shine on the floor where the chickens can make the best use of it.

The north wall is six feet high above the floor and this wall is made tight to keep boards on the lower side of the ceiling joists about two inches apart. In winter the space above this slatted floor is filled in with straw for the purpose of having



out the cold. A partition three and one-half feet from the north side of the house forms an alley and the nests are placed against this partition so the eggs may be gathered without going into the henhouse proper. The nest boxes are placed high enough above the floor so the fowls may use the space under them for scratching. The nest boxes are easily removed for cleaning and they are covered with a steep slanting roof to prevent the hens from roosting on them.

The ceiling in this house is an important feature. It is made by nailing one by six good ventilation without creating a draft. In the summer time the straw is removed and the place thoroughly cleaned.

For further ventilation there is a vent stack in each end of the building which comes down to within a few inches of the floor. These ventilators pass out through the roof and extend above the highest point and are capped to keep out the rain. There is also a slide near the bottom to regulate the amount of air. If heavy fowls are kept in this house good ladders should be provided to help them up and down or they may get bumble foot.

Ice Houses and Cold Storage

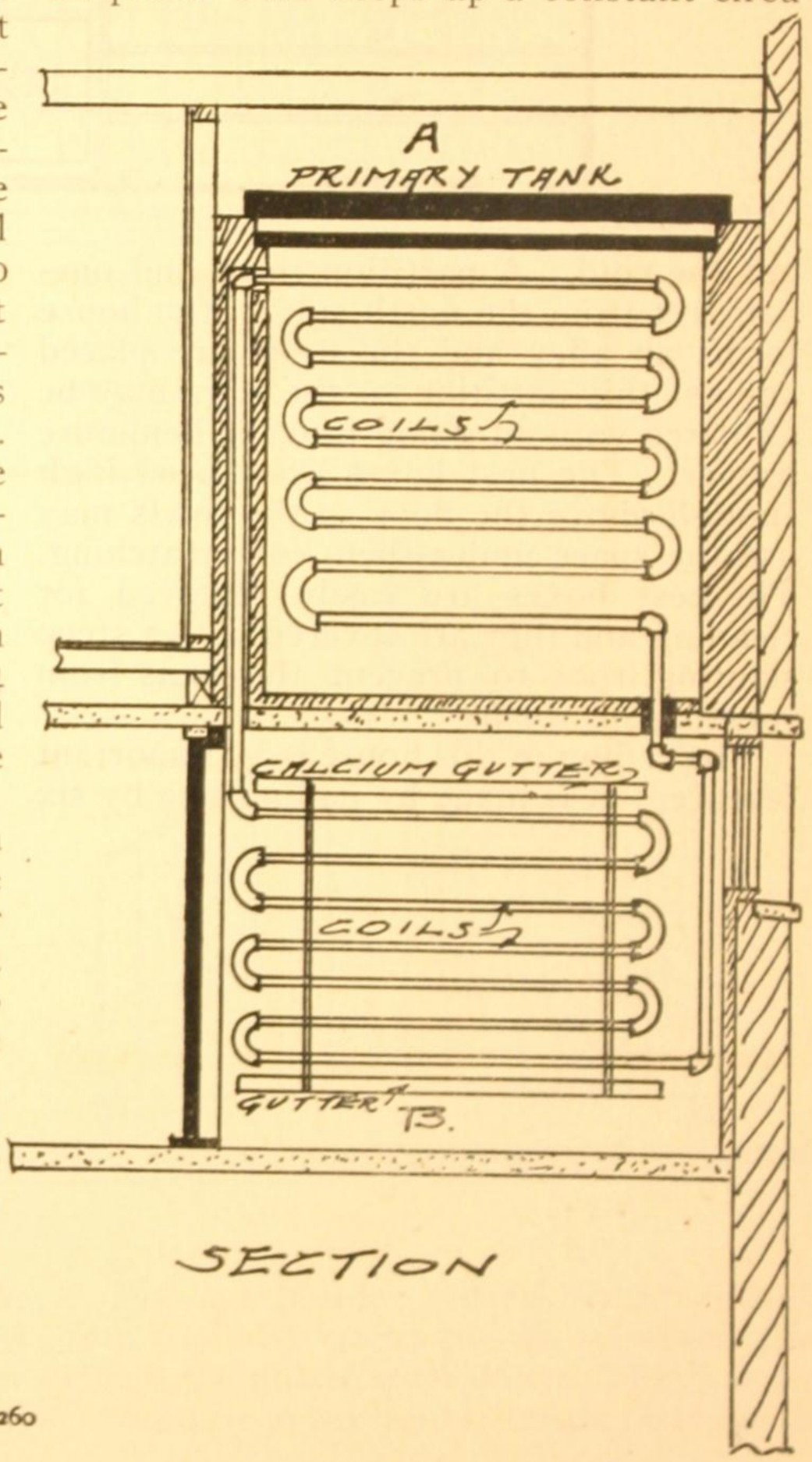
ICE FOR COLD STORAGE—A223

Blue Prints Will Cost, $15.00

ICE is still the most economical cooling medium for small refrigerators. Small automatic ice machines are in use but more or less expert supervision is necessary to keep them in working order. The advantages of direct ice cooling are simplicity and comparative economy, but the average refrigerator cooled by ice will hardly give a temperature below 45 or 40 degrees F and it has the disadvantage that the air is too damp for best results. Sensitive products like butter, milk and eggs will not keep well in a moist atmosphere.

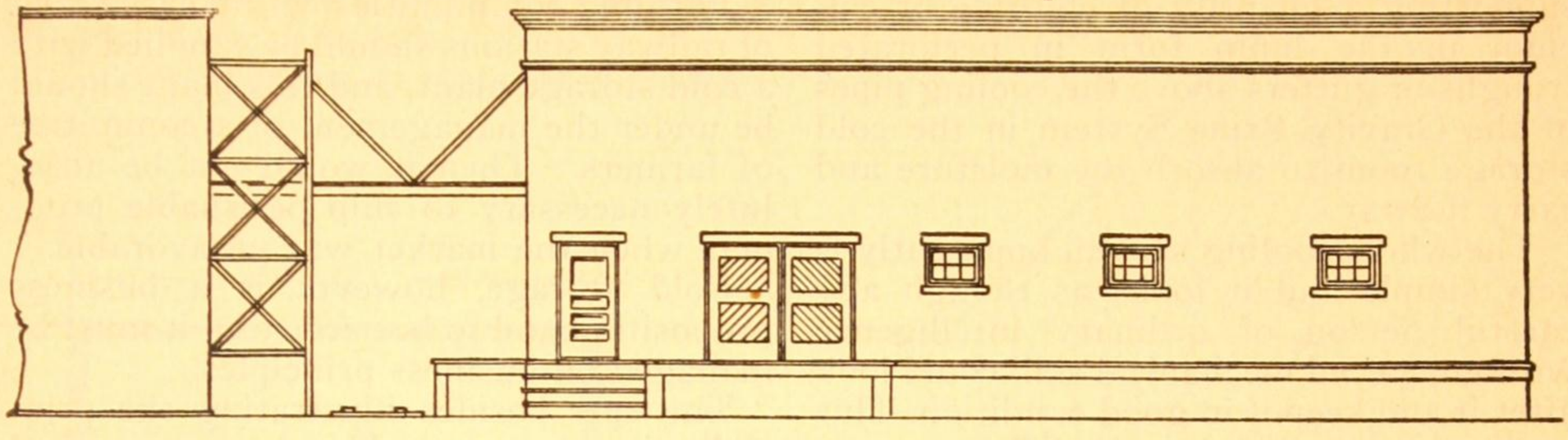
To meet the difficulties between a large extensive refrigerator plant and the ordinary ice cooled refrigerator Madison Cooper has invented and designed what he calls the "Gravity Brine System" which will produce a temperature as low as 14 degrees F. The system is very simple and may be applied to a very small plant or one of considerable dimensions.

The diagram shows the principle upon which it works. In the small plant there is an insulated box or tank A on the floor above the cooling room. In this box is a coil of pipe which reaches down below into and coiled in the cold room B. This pipe coil is filled with a brine solution of chloride of calcium. The tank A is then filled with a mixture of crushed or broken ice and coarse salt which cools the brine. As cold brine is heavier than warm brine it settles in the pipes and the warmer brine from below rises in the other pipes to take its place. This keeps up a constant circu-



SECTION

lation whereby the pipe in the lower room is kept cold and the degree of cold is regulated by the size of the cold storage room, the area of pipe surface and the amount of



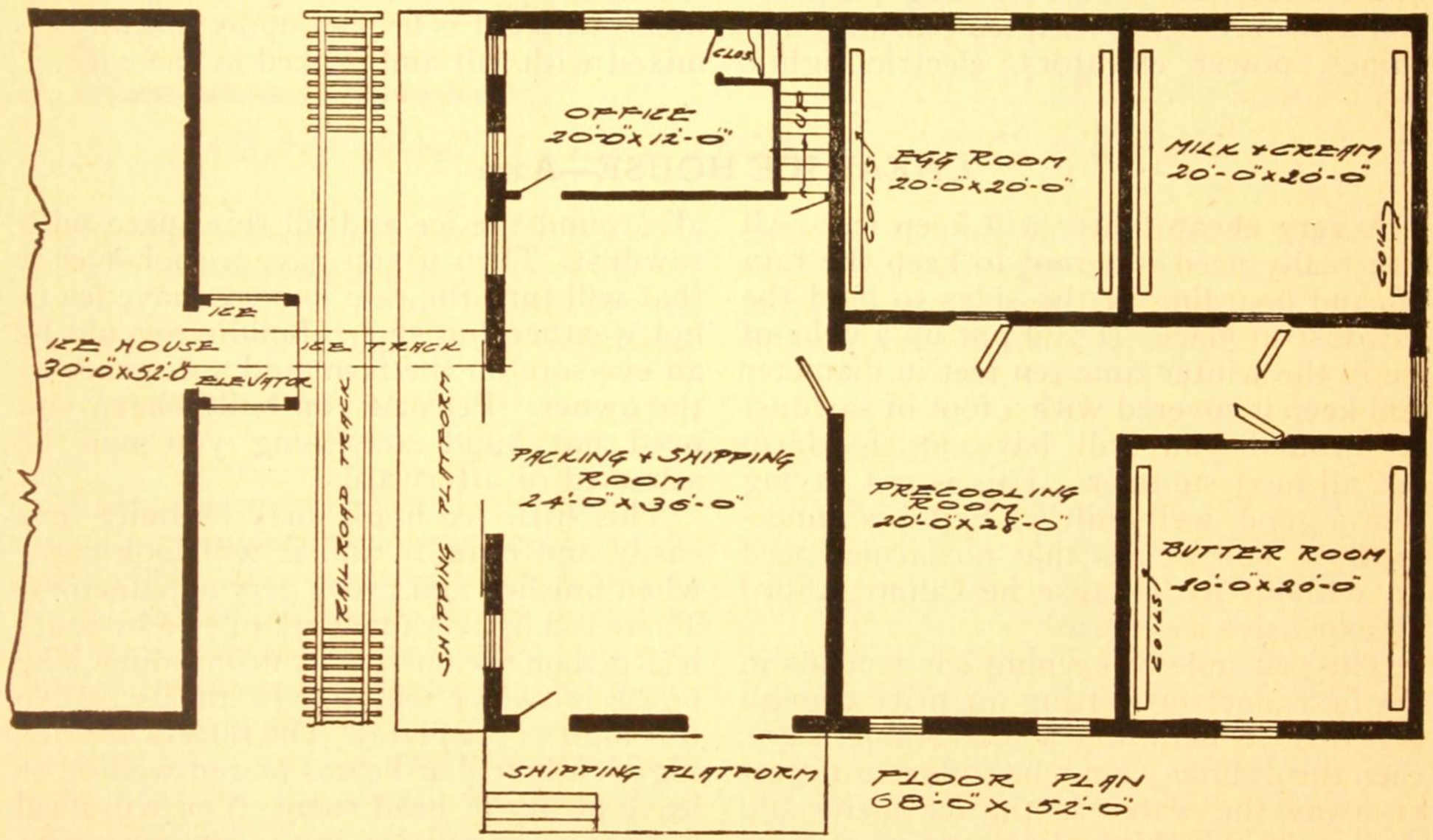
FRONT ELEVATION

salt used with the broken or crushed ice. The arrows show the direction in which circulation flows. More or less pipe is used in proportion to the amount of cubic space to be cooled and the temperature maintained.

to 40 degrees above zero. Mr. Cooper states that a temperature as low as six degrees has been obtained.

These temperatures of course are sufficiently low for all cold storage and freezing purposes in common use. In fact, thirty to thirty-three degrees is about as low as is required for ordinary cold storage.

It is well known that ice forms on cold storage pipes when the temperature is be-



Ice and salt will produce a temperature below zero, so the circulating brine may be easily cooled to five or ten degrees F, which, when the pipes are properly proportioned will produce a temperature in a good, well built storage room of from 10

low the freezing point and the collection of ice not only interferes with the proper cooling process, but it adds dampness and this is to be avoided as far as possible. Mr. Cooper uses a process which he has patented called the chloride of calcium pro-

cess for preventing frost on refrigerating surfaces and for purifying and drying the air of cold storage rooms. This process is extremely simple and consists simply of supporting a quantity of chloride of calcium in the lump form in perforated troughs or gutters above the cooling pipes of the Gravity Brine System in the cold storage room to absorb the moisture and carry it away.

The whole cooling system apparently is very simple and it looks as though any careful person of ordinary intelligence without special mechanical skill could look after it and keep it in good condition. This cooling system is in use in different parts of the country for the cold storage of butter, cheese, fruits, eggs, dressed poultry, meats and for the manufacture and keeping of ice cream.

Some of the plants have different rooms maintained at different temperatures. Some have fans for ventilating purposes and some are fitted with ice crushing machines, power elevators, electric lights, etc. It seems that the system may be employed to advantage for very small plants or for very large ones and that the results are equally satisfactory.

Farming communities within easy reach of railway stations should be supplied with a cold storage plant, and this plant should be under the management of a committee of farmers. Then it would not be absolutely necessary to ship perishable products when the market was unfavorable.

Cold storage, however, is a business proposition and to be successful it must be managed on business principles.

The cuts besides illustrating the principle of cold storage show how a practical cold storage warehouse may be built. The ice house is indicated at the left with an ice elevator to hoist the ice into the building from the cars. There is a plaform which connects the two buildings so the ice may be conveniently transferred to the upper part of the cold storage warehouse where it is broken up by machinery, mixed with salt and packed in the coils.

CHEAP ICE HOUSE—A222

A very cheap house will keep ice. All you really need is a roof to keep the rain off and boarding at the sides to hold the sawdust in place. If you put up a cube of ice in the winter time ten feet in diameter and keep it covered with a foot of sawdust all around you will have ice for farm use all next summer. This is not saying that a good, well-built ice house is unnecessary. The idea is that no farmer need do without ice because he cannot afford an expensive ice house.

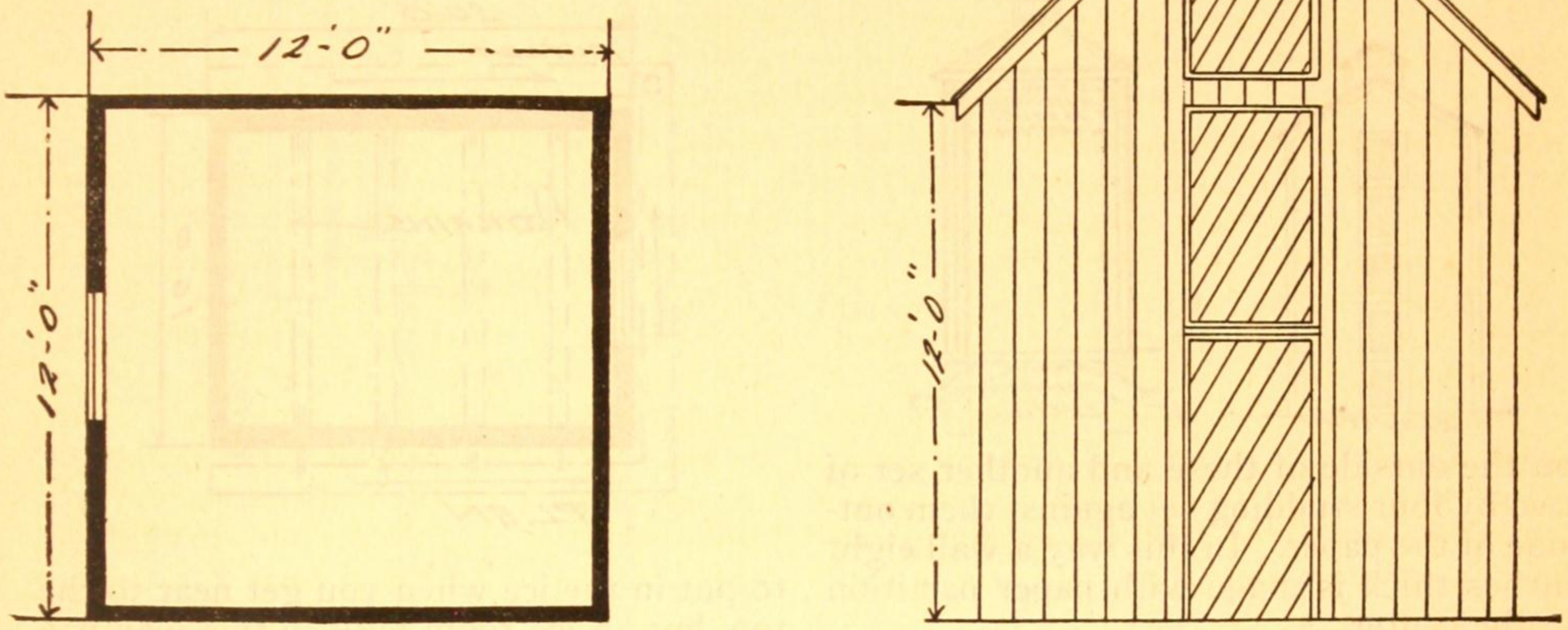
The principle of keeping ice depends in the first place on getting quantity enough together to maintain a low temperature, then the drainage must be sufficient to carry away the water as the ice melts and drips. In the third place you must keep the air away from it which may be done by keeping wet sawdust continually close around the ice.

You can set up four poles, nail rough boards on the inside, leaving a foot space all around the ice and fill this space with sawdust. Then if you have a roof over it that will turn the rain you can have ice in hot weather, but such a building would be an eye-sore on the farm and a disgrace to the owner. Because you build cheap you need not build something you will be ashamed of afterwards.

This little ice house may be built very easily and cheaply and it will look right when finished and prove very satisfactory. There is a light framework of two by fours boarded on the outside by drop siding. The house is twelve feet square and is twelve feet high to the plates. The rafters are tied together by collar beams placed well up to leave plenty of head room. You will need head room in putting in the top courses at filling time. You can board up the inside or not; it makes but little difference. It is better to put the house in the shade of a large tree, or on the north side of a building, but drainage is more important than

shade. If the drainage is not good naturally, put in tiling. Fill above the tiling with cinders and put a foot of sawdust on top of the cinders. Don't use straw if you can help it because it rots. Pine sawdust is the best if you can get it.

Fill the house in January or February. the ice a foot or two in depth on top. Then as the warm weather comes on in spring climb in on top of the sawdust about once a week just to see that there are no cracks



PLAN AND ELEVATION OF ICE HOUSE

Throw water over the ice cold nights so it will all freeze solid together, then in March put on the sawdust, filling in between the ice and the sides of the house and cover made by settling that will let in the air to melt the ice. Your summer supply may depend on packing the sawdust a few times during March and April.

LARGER ICE HOUSE—A224

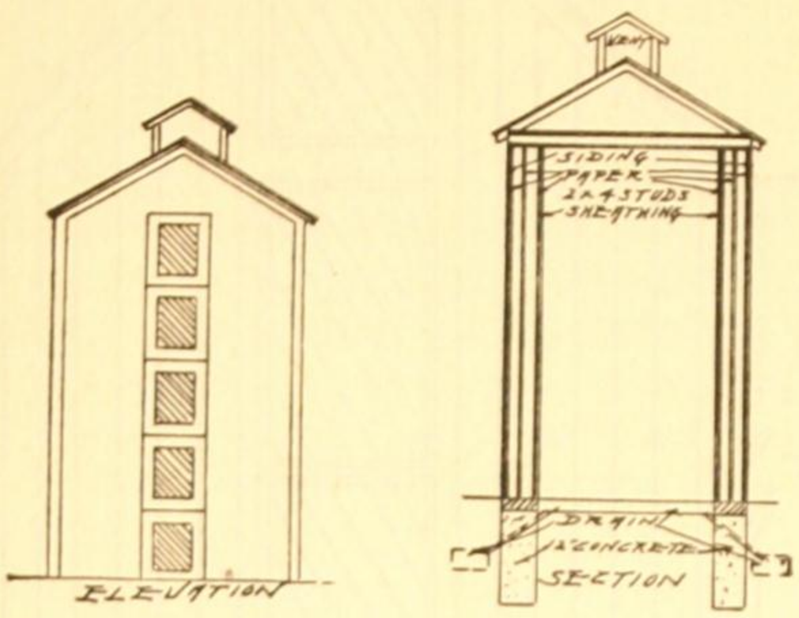
Where a large number of cows are kept and a large quantity of ice is needed in the dairy every day in summer it will pay to put considerable expense on the ice house. The cooler and better the house the more economically you can keep ice. One builder even recommended one air space after another up to seven separate air spaces in order to prevent heat from striking through to warm the interior of the house.

The ice house should be nearly square because the ice keeps better when it is in one compact mass. In starting to build as good an ice house as this one it pays to put quite a bit of work on the foundation. Ice melts in the best houses and you must take care of the drip. This plan provides for a course of tiling all around the outer wall and a course of cross tiling every four feet, the cross tiles connecting with the outside tile and all empty in the one outlet through a trap at the lower corner.

No earth is put back into the excavation, but the tiles are covered with coarse cinders, cinders that have been raked over and only the hard burned parts used. If the cinders are too fine for a rake, use a screen, but manage some way to keep the ashes out. Sometimes the ashes pack down and hold water like cement.

The house is sixteen by twenty feet and the wall is four inches larger each way. The sills are made of two by eight double and are laid flatways on the wall in soft cement. The wall is also smooth up to the sill on the inside with cement neatly troweled around.

Two by four studding is set flush with the inside of the sill. Building paper is put

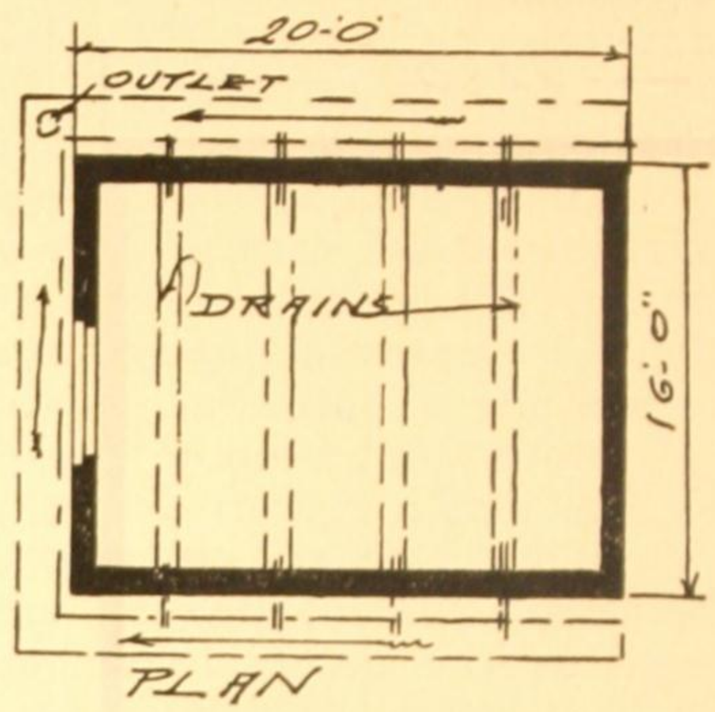


on the outside of these and another set of two by four studding set against them outside of the paper. In this way a wall eight inches thick is made with paper partition in the center.

The wall is then finished with paper and siding outside and with paper and siding inside, put on as carefully as possible and made as nearly air tight as good material and good workmanship can make it. The paper and boarding is lapped over on the sill at the bottom and on the plate at the top so that the sides of the building are completely insulated from the sill to the ceiling.

The ceiling is made with two by six joists and matched boarding laid with paper like a floor on top and another matched boarding nailed like a ceiling with paper on the under side, the paper being tacked to the joists both above and below. Paper also is used on the rough boards under the shingles and a good ventilator is provided to keep the air moving in the attic.

Because of the ceiling it is more work



to put in the ice when you get near to the top, but an ice room built in this way is a refrigerator in itself and it will save ice enough to pay for a little inconvenience at time of filling. The doors fasten in front like refrigerator doors. They are built like the sides of the house with air spaces and are made to fit tight in the jambs. All doors and door frames must be made of kiln dry material and filled to resist moisture. There is no floor, the sawdust just rests on the cinders, and the ice rests on the sawdust which should be at least a foot deep on top of the cinders.

TWO HUNDRED TON ICE HOUSE— A228

An ice house to hold two hundred tons of ice is given in this plan. This ice house was built on a large dairy farm near a good sized village. Some seasons the farmer sells considerable ice to the village at paying prices.

The building is twenty feet wide by thirty feet long and sixteen feet high to the eaves. When completely filled it would hold about two hundred and twenty-five tons.

The exterior is finished with drop siding and a stained shingle roof. Next to the siding is a layer of building paper, inside of this and nailed to the outside row of two by four studding is matched ceiling of good quality. Then comes a dead air space four inches thick. Next is a layer of hair felt seven-eighths of an inch thick nailed to the inner edges of the four-inch studding; inside the hair felt is another matched ceiling of narrow pine sheathing,

another ceiling e paper ve and rough od ven- moving e work

to the y is a ve ice nce at front built paces de of All mois- just ts on t font

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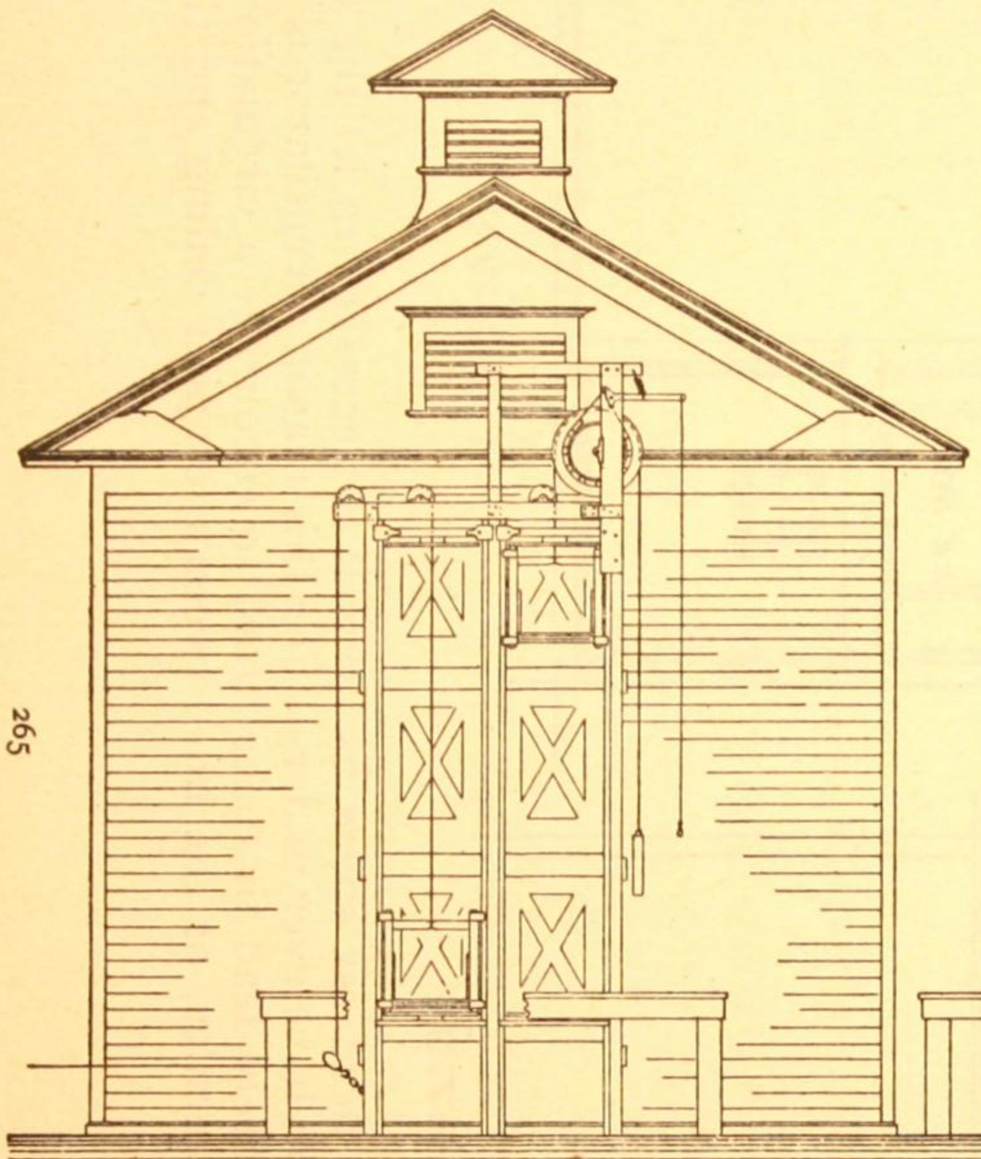
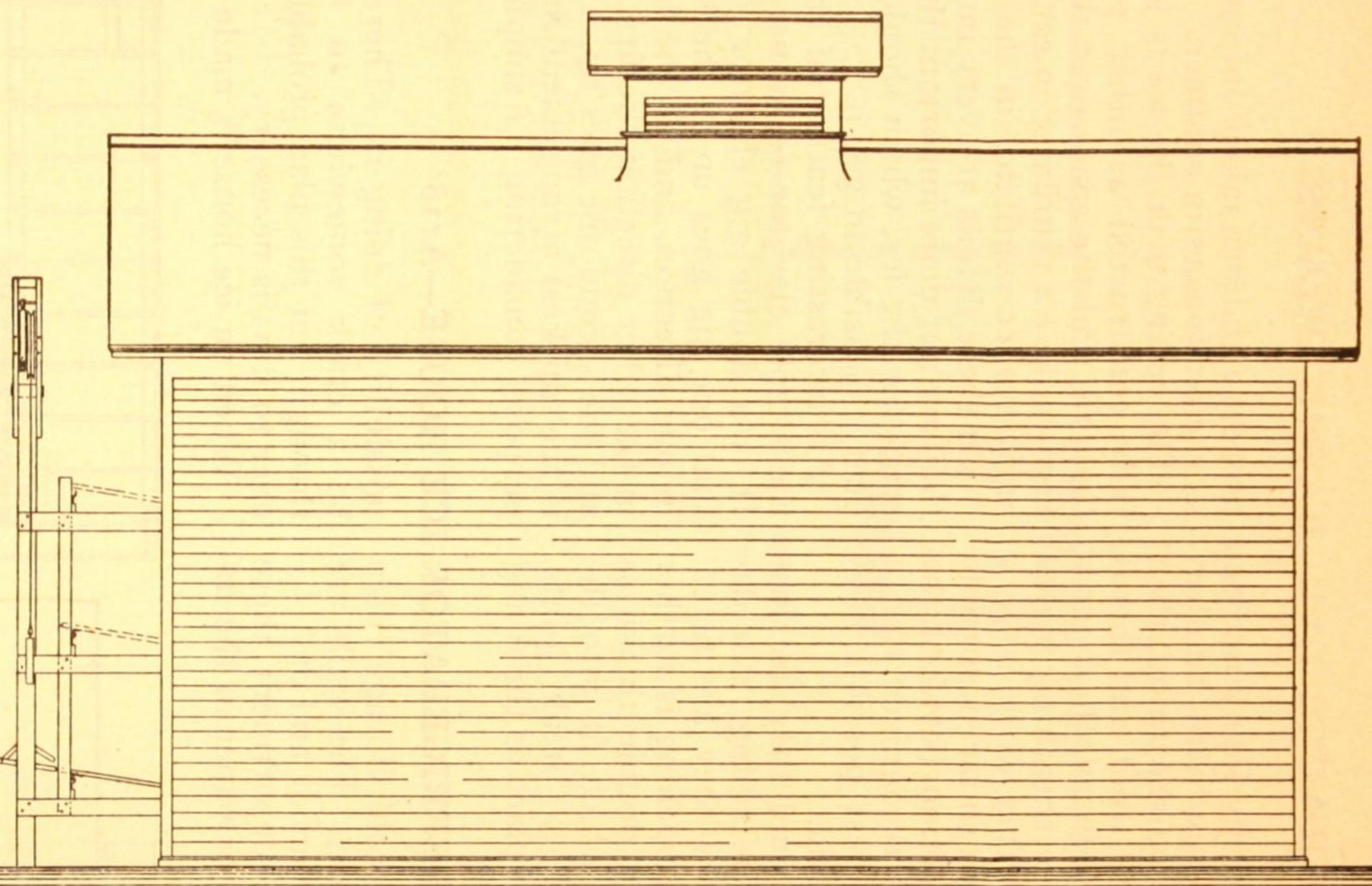
DESIGN OF AN ICE HOUSE HAVING A CAPACITY OF 200 TONS.

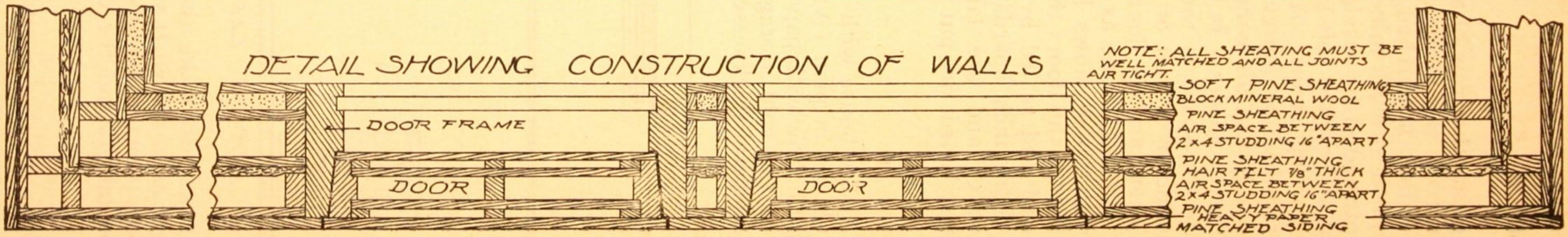
FRONT ELEVATION



SIDE ELEVATION



DETAIL SHOWING CONSTRUCTION OF WALLS



NOTE: ALL SHEATING MUST BE WELL MATCHED AND ALL JOINTS AIR TIGHT.

SOFT PINE SHEATHING
BLOCK MINERAL WOOL
PINE SHEATHING
AIR SPACE BETWEEN
2 x 4 STUDDING 16" APART
PINE SHEATHING
HAIR FELT 1/8" THICK
AIR SPACE BETWEEN
2 x 4 STUDDING 16" APART
PINE SHEATHING
HEAVY PAPER
MATCHED SIDING

then another row of two by four studding lined on the inside again with another boarding of matched pine sheathing, then an inch of block mineral wool, and this is protected on the inside with another boarding of matched soft pine sheathing nailed to furring strips. All this work is very carefully done to prevent so far as possible the slightest air connection between the different spaces. It is recognized that a dead air space is the best possible non-conductor of heat or cold.

There are six doors and they are just as carefully made as the siding. The detail drawing shows how they are fitted. Inside of the doors the opening is further closed and sealed by a double thickness of loose inch boards, which fit into the grooves and are laid to break joints. These boards are put in place as the filling proceeds and are taken out one at a time as the ice lowers in summer.

The ceiling over the ice is just as carefully constructed as other parts of the building and the space over the ceiling is kept cool by a ventilator in each gable end and another ventilator in the roof.

All these details are very important but they are not more important than the cov ering for the ice, which should be of saw dust if possible to get it.

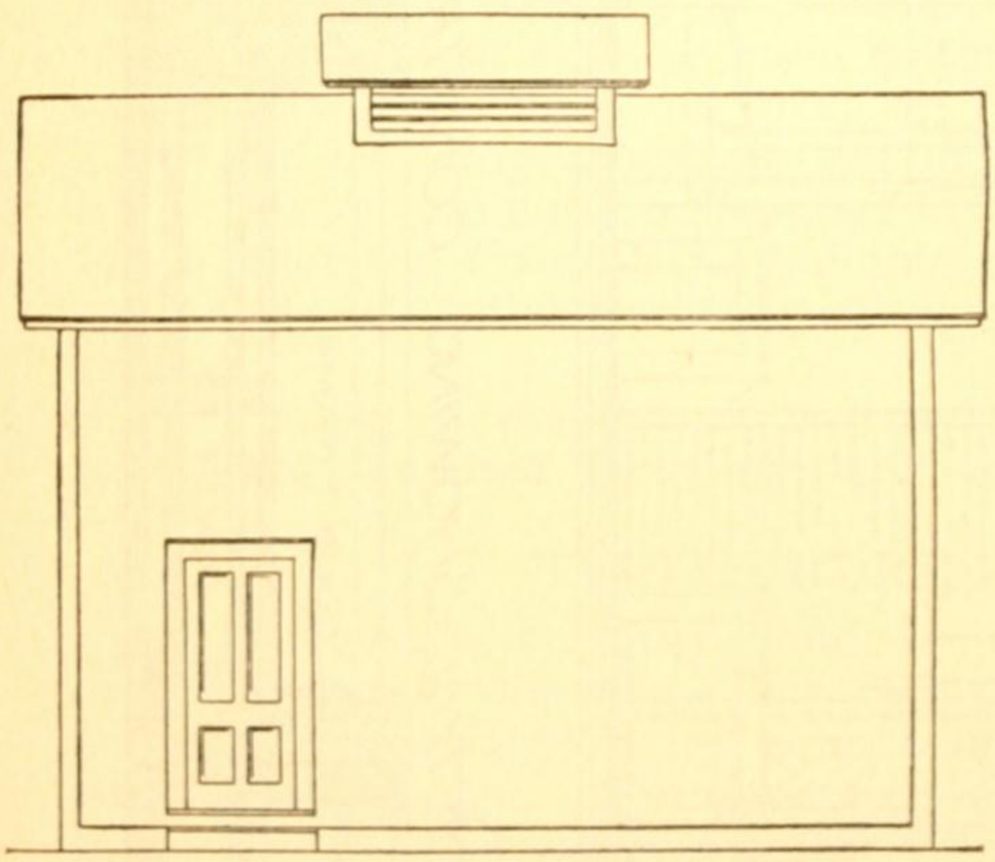
An interesting feature of this house is the simple elevator to be used in filling. It is a double gig elevator so arranged that one gig goes up as the horse walks in one direction, and as the horse walks in the other direction the first gig lowers and the second one goes up. Perhaps this is the quickest arrangement made for the purpose, considering its simplicity.

REFRIGERATOR ICE HOUSE—A118

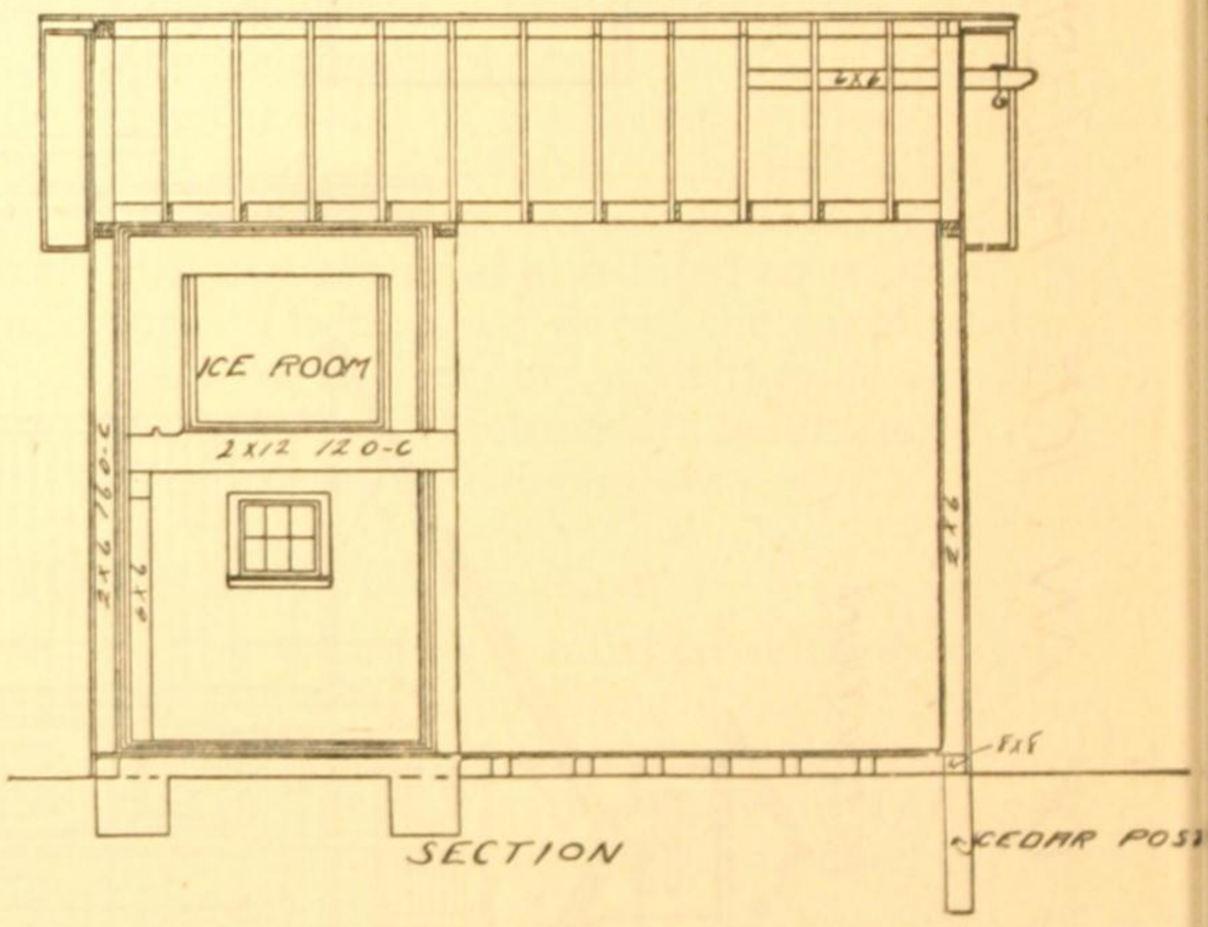
An ice house with a cold storage room is shown in plan (A118). The walls are built hollow with paper inside and out.

In the cold storage department there are several thicknesses of paper in the inner wall to make the dead air space as tight as possible. If you have ever undertaken to make an absolutely dead air space you understand the difficulty, or the impossibility of doing it. There is sure to be a crack somewhere to let the air through, but this plan probably comes as near to it as is necessary.

When an ice house is made as tight as this it is necessary to let the top air out. For this reason a ventilator is built in the roof to encourage a circulation of air between the upper ceiling and the shingles.

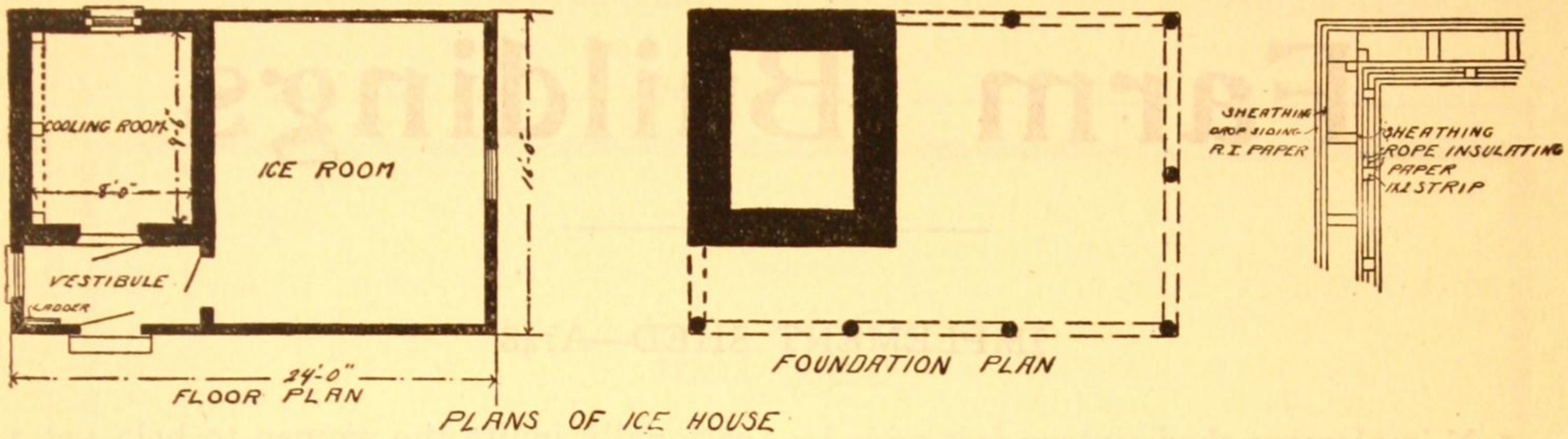


FRONT ELEVATION



SECTION

In this arrangement the cold storage department is supplied with ice as needed by putting in a quantity, say once a week.



PLANS OF ICE HOUSE

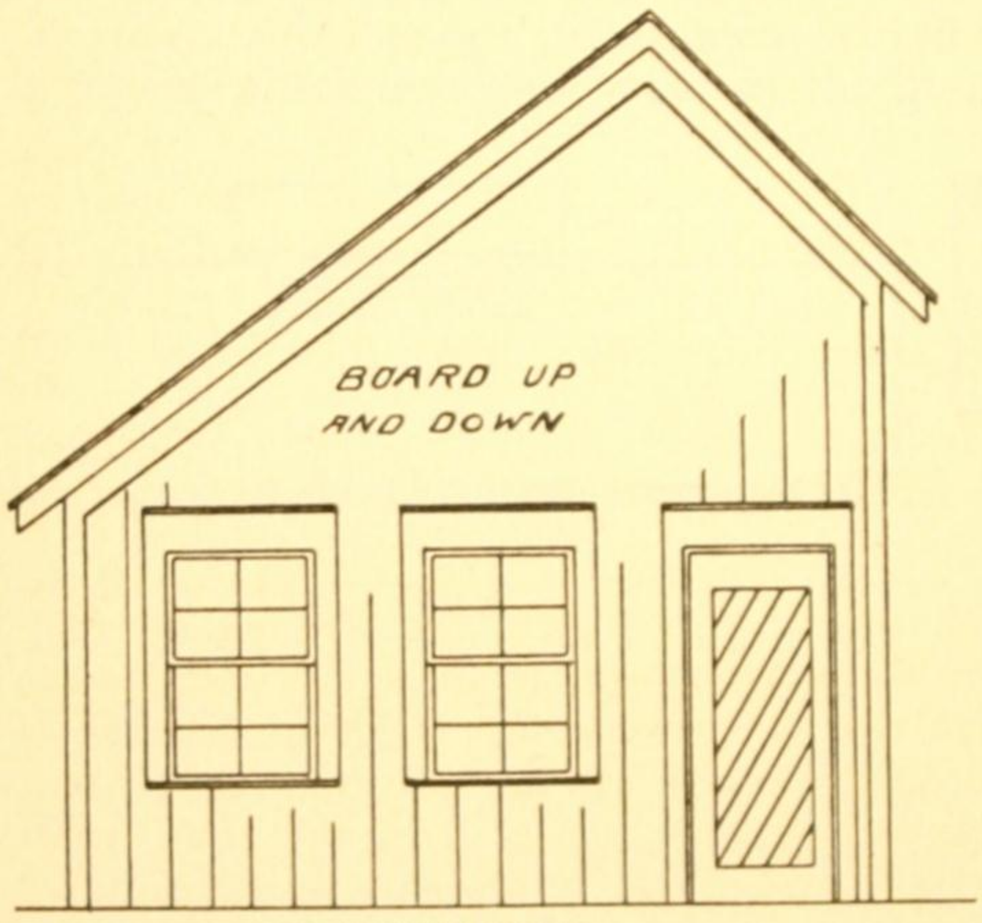
The construction of an ice house like this requires good workmanship. You will need the best mechanic in the neighborhood and it will pay to read up on cold storage before you start in. If it is made just right it will be a great comfort and satisfaction, but if it is not made right it will cause a great deal of trouble and be a continuous annoyance.

Miscellaneous Farm Buildings

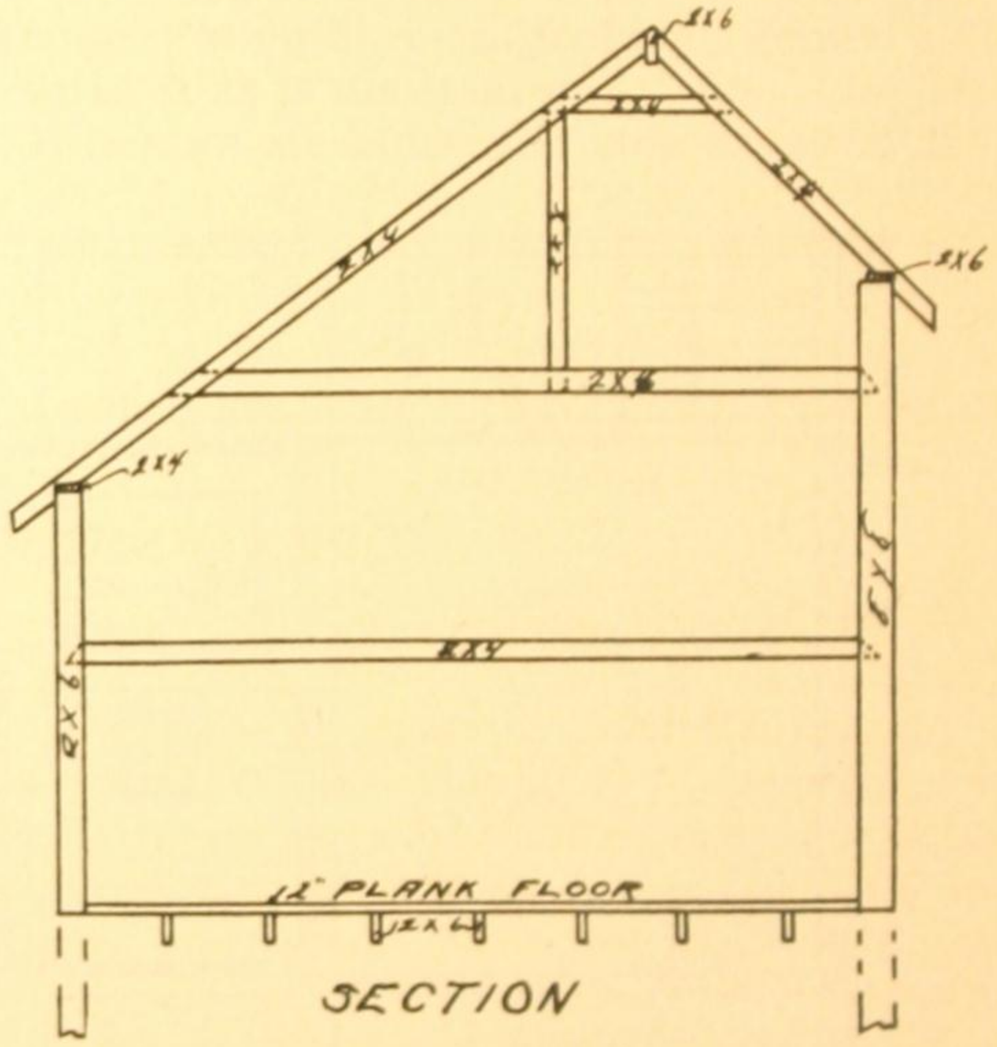
IMPLEMENT SHED—A148

AN implement shed sixteen feet wide by forty-eight feet long is given in plan (A148). This shed really is built in sixteen foot sections and may be carried to any length, but this size will hold the implements and machinery on an ordinary farm and leave room at one end for a work bench and repair shop.

The front is all doors so that any part of the shed may be opened and any implement removed without the work of getting it past some of the others. We have all had experience in crowded quarters for farm machinery. We have been obliged to call all the men together and occasionally invite the women to help get a grain drill out from behind harrows, plows, cultivators and other machinery. One reason why farm machinery is neglected is because farmers have no place to keep it. It is not repaired when it should be for the same reason. It is quite a job to do a simple piece of repair work if you haven't the tools or the room in which to do it, but anybody can clean up machinery and oil or paint it if they have a comfortable place to work and the tools to work with.



ELEVATION

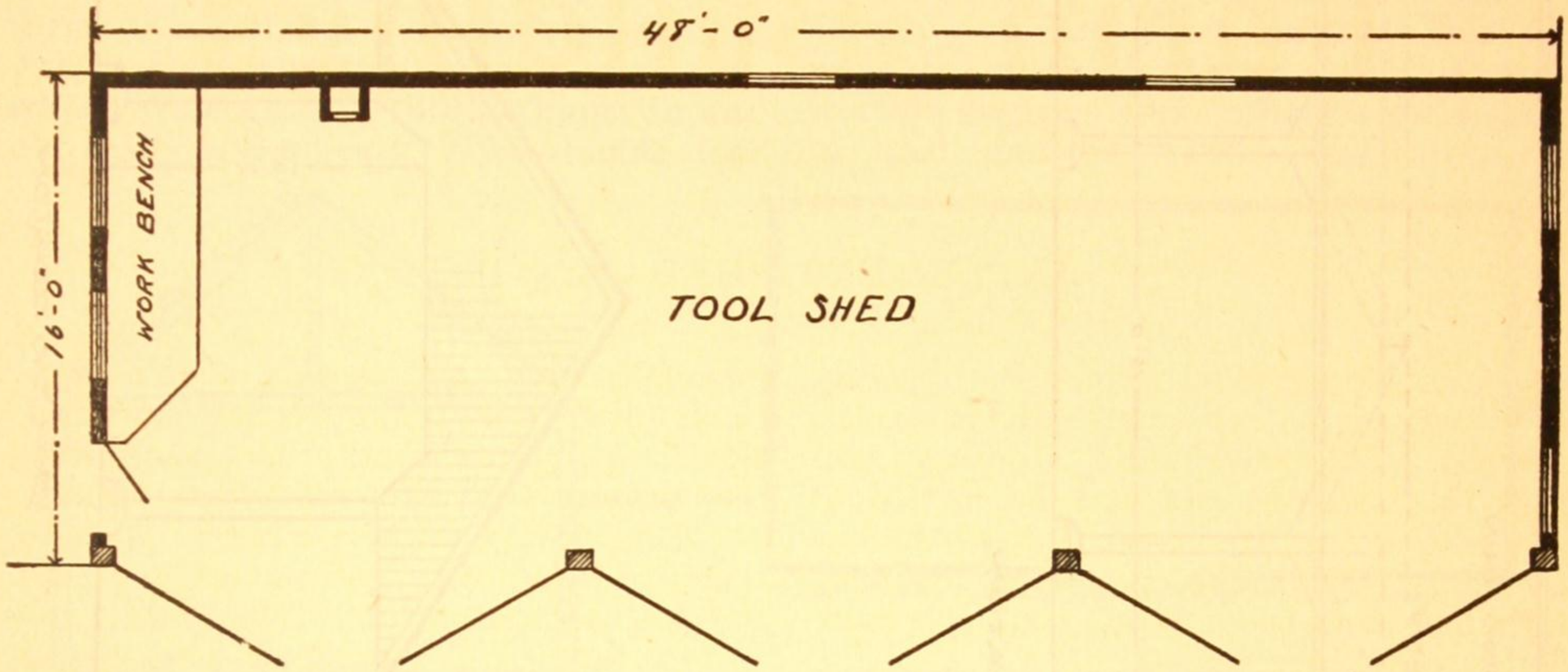


SECTION

The front part of this shed is built higher than the back part in order to leave

head room. If you want to get in with a binder with the reel on, or to house a threshing machine or traction engine you need about ten feet to the top of the doors, but you don't need so much height to the back end. The doors in this plan are ten feet high and the cross girts are the same height because it is sometimes necessary to move the machines lengthwise of the shed and the same head room is then needed. A truss is formed at each bent with the rafters to prevent the building from spreading. The two by four nailers shown in the detail drawing are intended for the end bents only.

In the end of the shed most convenient a good solid bench should be rigged up and fitted with a good vise. At the back of this bench there should be a long low window similar to those used in blacksmith shops all over the country. The bench should be heavy, solid and at least three feet wide. There should be a good floor especially in the bench end of the building and it is a good plan to put up a chimney and have a stove there.



OPEN VEHICLE SHED—A221

A shelter for vehicles in this case is provided by a row of posts covered by a protecting roof, braced as shown in the drawings. It is necessary to brace a building of this kind and as bracing near the ground would be very much in the way this form of truss work has been adopted.

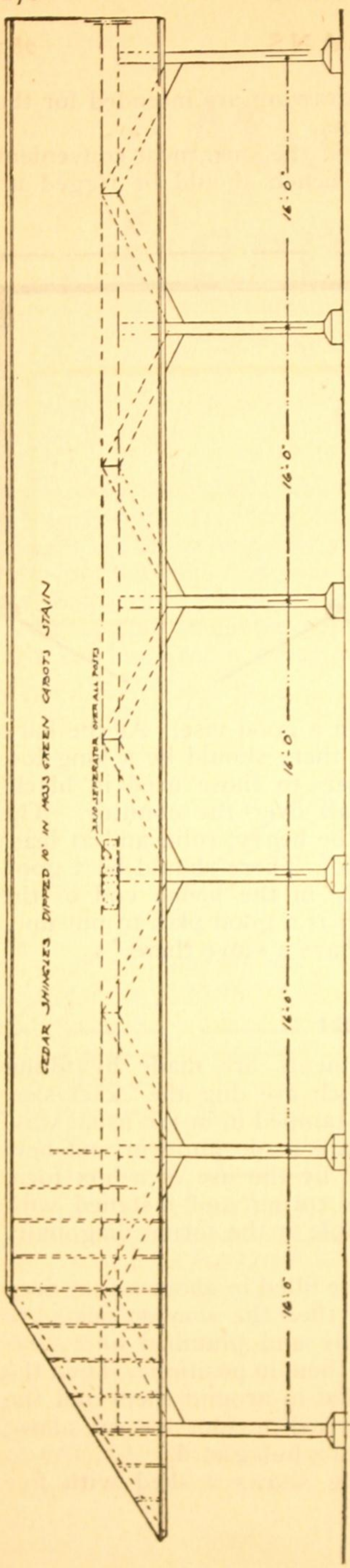
Eight by eight wooden posts are set in a double row sixteen feet apart both ways, thus forming a series of bays sixteen feet square. The wooden posts are set in concrete abutments twenty inches square and four feet high set in the ground from three and one-half to four feet according to the nature of the ground.

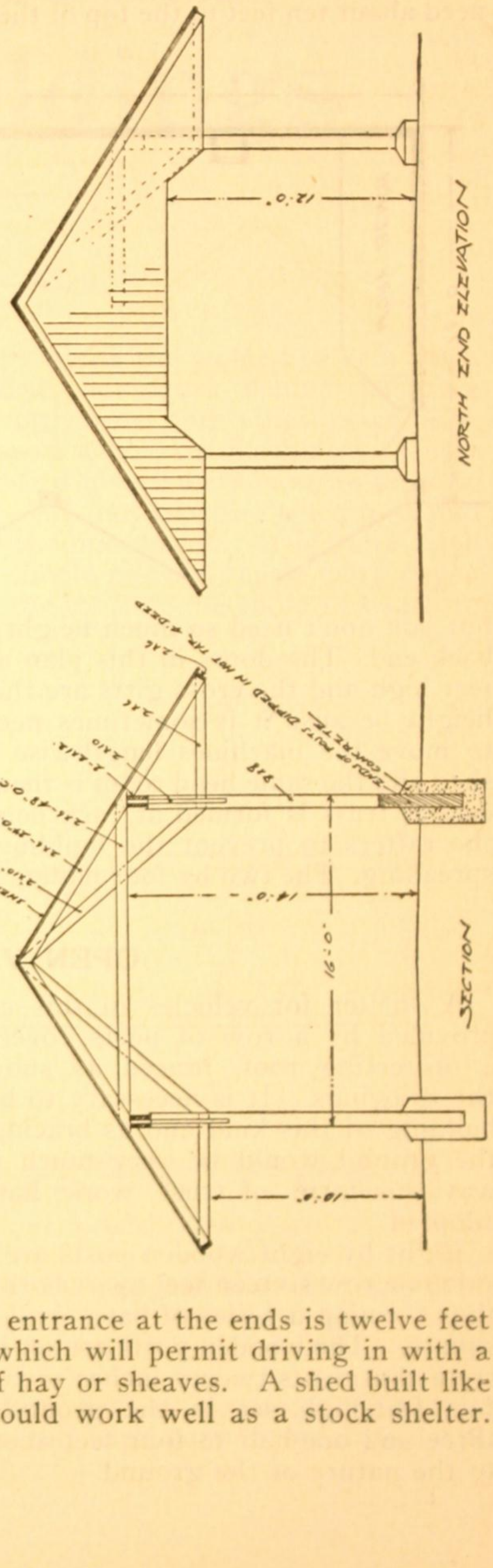
These abutments are made by filling the holes, which are dug the exact size, with concrete tamped in in the usual way, but the tops are made uniform and beveled as shown by the use of a box form hinged at one corner and fastened with a hasp and staple at the corner diagonally opposite.

The holes are filled in about a foot deep with concrete, then the wooden posts are set up carefully and plumbed and staylathed to keep them in position. Then the concrete is filled in around them and the abutments carried a foot or so above ground to form a hub guard.

The drawing shows a shed with five

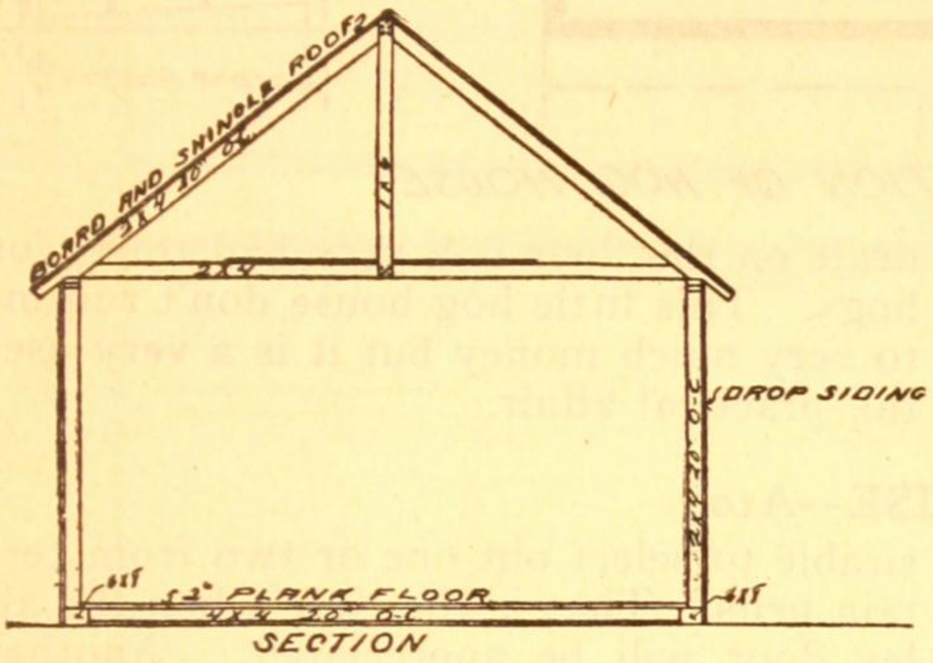
of these sixteen foot compartments, but fewer can be used if a smaller shed is required, and the building would look alright when finished.

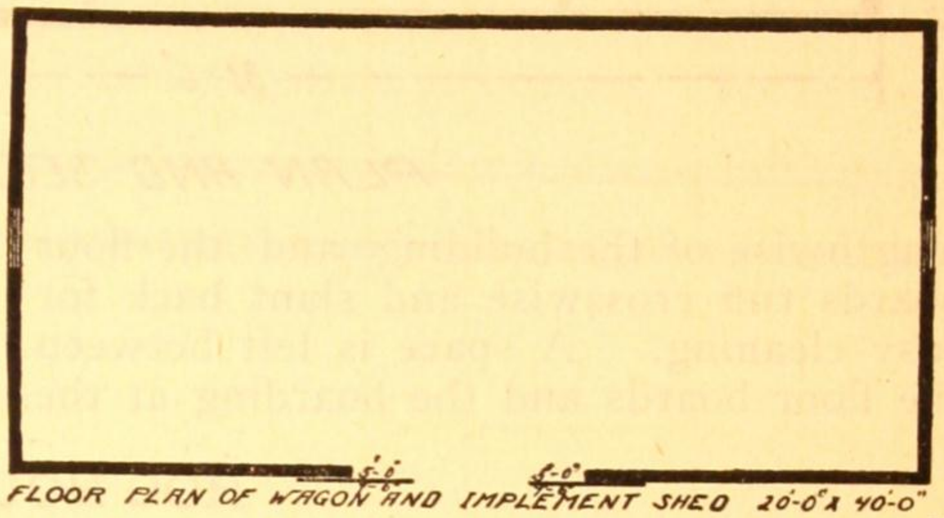



NORTH END ELEVATION
SECTION
16:0"
14:0"
10:0"
HEATHING & SHINGLES
2x10
2x8
2x4
2x6
2x12
2x10
2x12
2x12
2x12

SMALL WAGON SHED—A108

A wagon shed twenty feet wide and forty feet long like the one in the plan illustrated, is a useful building on every farm. One thing is important about a wagon shed, and that is to have the entrance wide enough to get things in and out easily and quickly. This double door





gives an opening ten feet wide, which is very good for small implements, but some binders require about sixteen. The door entering an implement shed must be high enough to let in the highest implements used on the farm, and there must be no cross timbers inside lower than the top of the door. A binder with a reel on takes considerable room.

The farmer building the shed will know whether he wants to house a binder under full sail or whether he wants to take it apart, and will, of course, build a doorway accordingly.

Implement sheds like all other buildings should be designed for what is to be required of them. An implement shed is a necessity on every farm, but some farmers want to house threshing machines and traction engines, while others want a shed to hold mowers, plows, cultivators, a wagon or two, and perhaps a few barrels and other truck. A large building, of course, would answer for everything, but it is not necessary to build bigger than a man wants.

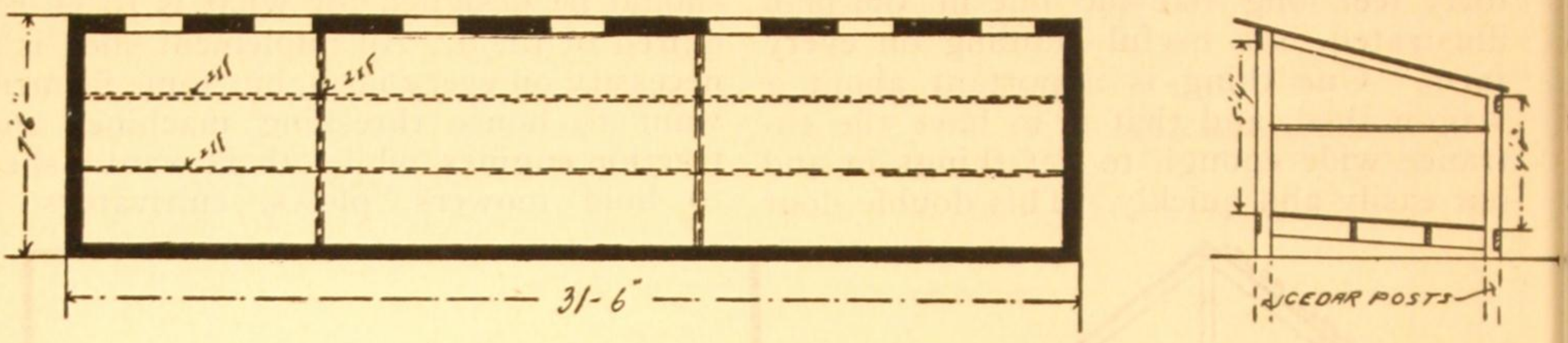
A good many tool houses are built without floors, but the extra cost of the floor is more than offset by the dryness and freedom from rust on the machinery. Wagons and machinery require repairing, which is easily done in a building like this when you have a good floor to work on. Odd days in winter may be profitably spent in such a building with a few carpenter's tools, a paint brush and an assortment of paints and oils.

CHEAP HOG HOUSE—A122

The cheapest kind of a hog house is shown in plan (A122.) It is only seven feet six inches wide, but it may be any length. This house is thirty-one feet six inches long because this length is covered by two sixteen foot joists. Even on well regulated hog farms where there is a good solid hog house this shed affair will be found useful to hold the overflow. It often happens that shoats in fall are kept in a muddy feed lot or sold too soon for lack of just such shelter as this to hold them while being finished. Beginners in the hog business could not do better than to build a little cheap hog house like this to start with.

The seven and one-half foot width permits of roofing the shed with sixteen foot boards cut in two in the middle. Each sixteen foot section will make two pens nearly eight feet square which will hold from five to seven or eight pigs according to

size. The posts are just set into the ground and the floor raised about a foot to keep it dry. Four two by six joists run lengthwise of the building and the floor boards run crosswise and slant back for easy cleaning. A space is left between the floor boards and the boarding at the back so a scraper may be used. In cold weather this space is closed by a hinged board which drops down on the inside. This precaution is necessary because a cold draft on the floor is a very bad thing for hogs. This little hog house don't run into very much money but it is a very useful, practical affair.



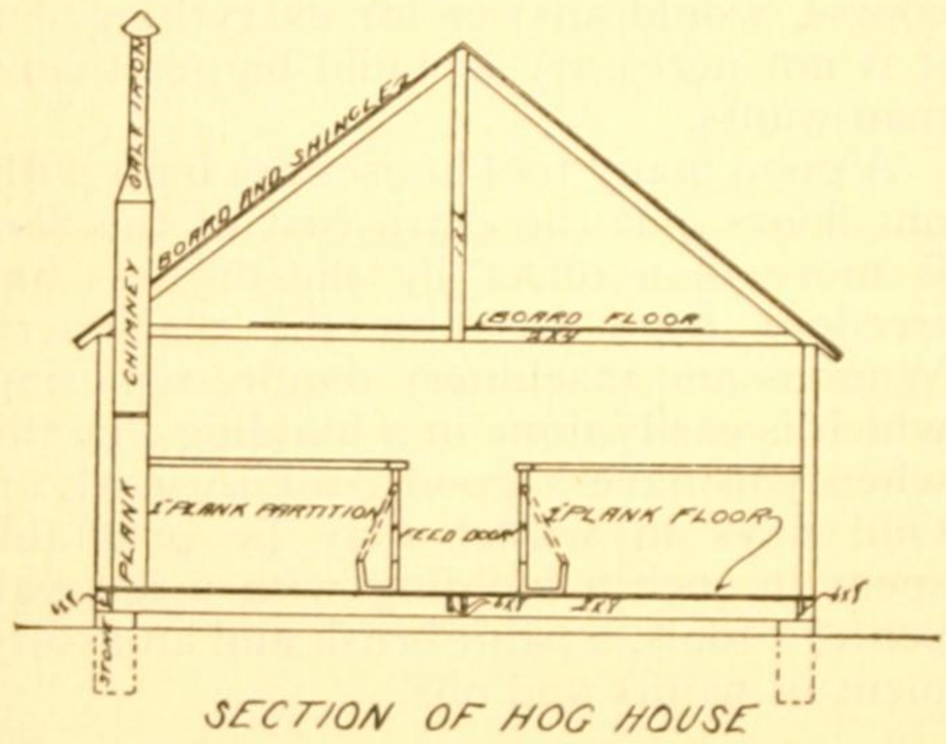
PLAN AND SECTION OF HOG HOUSE

HOG HOUSE—A109

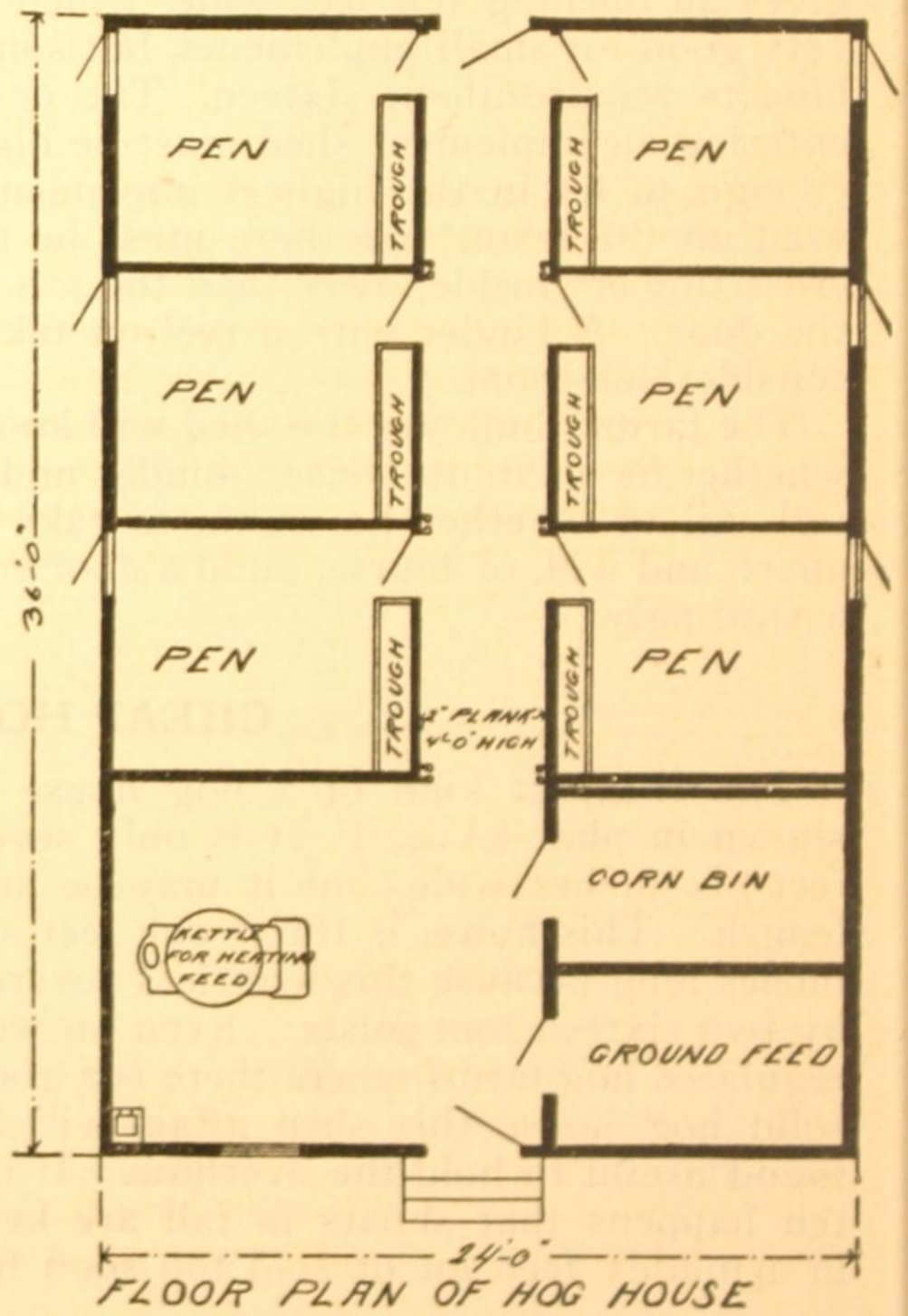
In building a hog house it is necessary to consider convenience in getting the hogs in and out, to provide means for loading them into wagons and a place for heating water and to do the work of killing. This plan offers an opportunity to back a wagon up to the rear door for loading and a room in the front end away from the pens is arranged for a feed room and slaughter house.

Provision is made for removing hogs from one pen to another by having cleats in the alley for holding sliding doors.

Hogs thrive better when animals of the same size are penned together. Some grow faster than others and it is sometimes desirable to select out one or two from certain pens. That is the time when the alley door will be appreciated. Another



SECTION OF HOG HOUSE



FLOOR PLAN OF HOG HOUSE

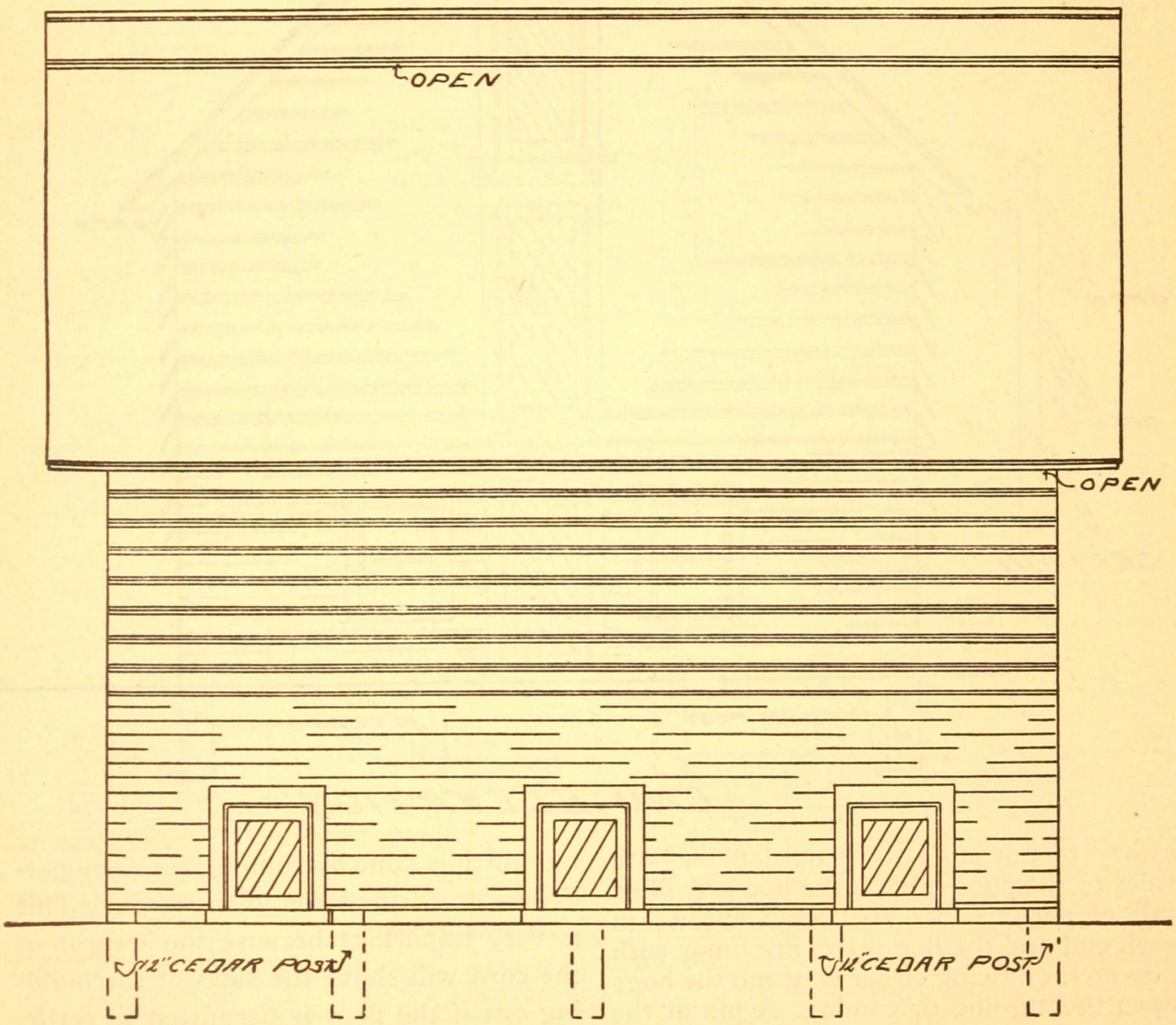
good thing about this hog house is the swinging front of the pens which swings back over the trough and prevents interference when putting in the feed. The partitions next to the feed room run to the ceiling but the partitions between the pens are only four feet high.

There is no cornice to the roof. The openings above the plates between the rafters are left for ventilation. This hog house will accommodate about forty hogs. From six to eight in a pen are enough, if more are housed together they pile up and smother each other.

HOG HOUSE AND CORN CRIB—A140

Hogs and corn may both be kept in the same house economically by building a house like the one shown in plan (A140). in the usual way with an alley between.

The floor above to hold the corn slants each way from the center. There is about

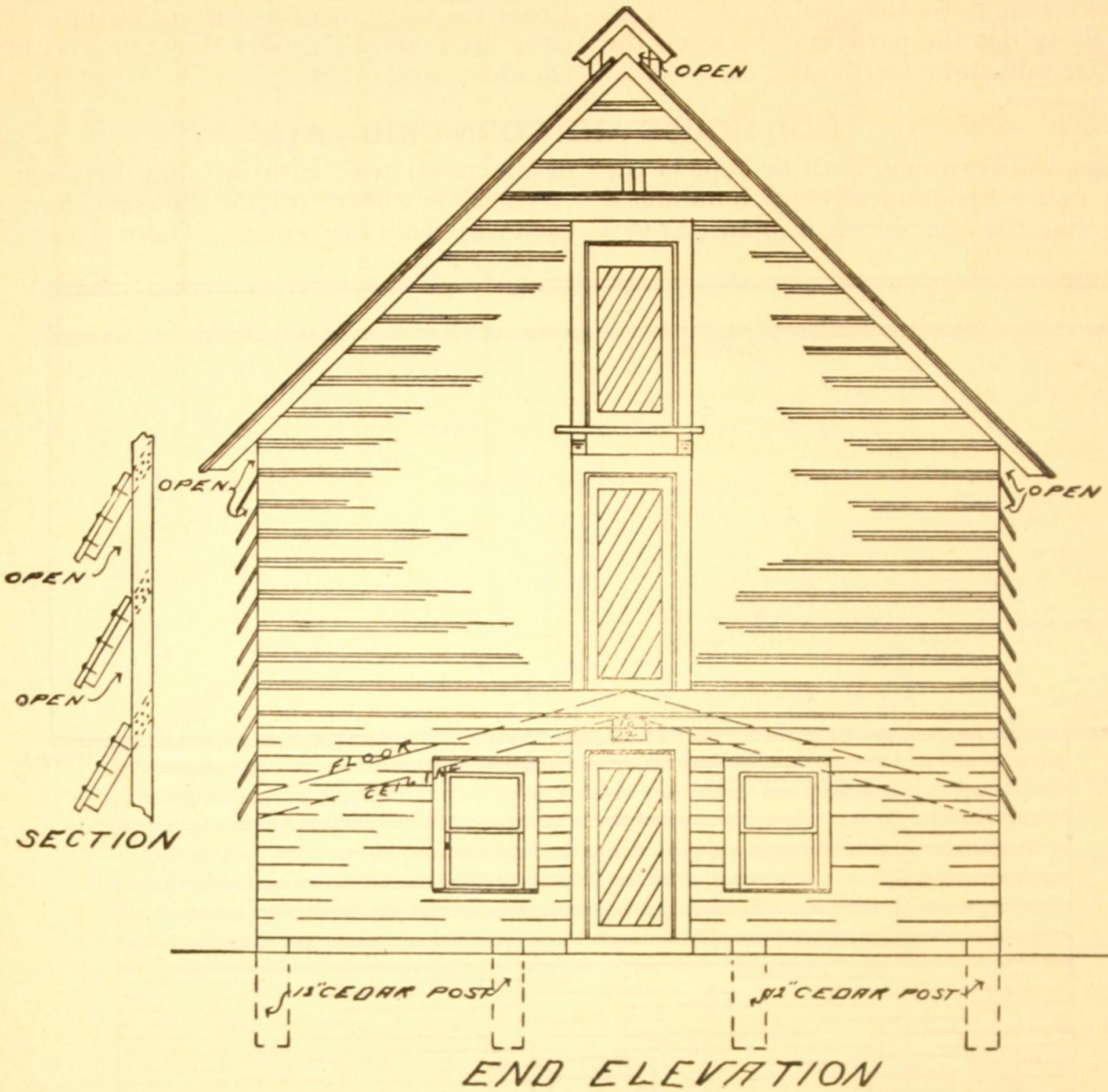


SIDE ELEVATION

The building is set up from the ground about a foot on posts and pens are made seven feet head room in the middle over the alley and the floor slopes to about five

feet to the sides of the building. This is for two reasons, to get the corn down as low as possible and to divide it into two parts to prevent moulding. It is also necessary to put a slatted partition on both sides of the floor ridge if the house is filled full of corn. There are two windows in each end and the hog doors are hung with pins so they swing either way and the hogs open them going or coming. A pin at the bottom outside holds the door shut when it is desirable to keep the hogs confined.

Because of the shape of the corn floor it is necessary to support it well in the center which is done by running the alley partitions up to the floor joists above. This is very important because the weight of the corn will shove the sides of the building out if the floor is permitted to settle.

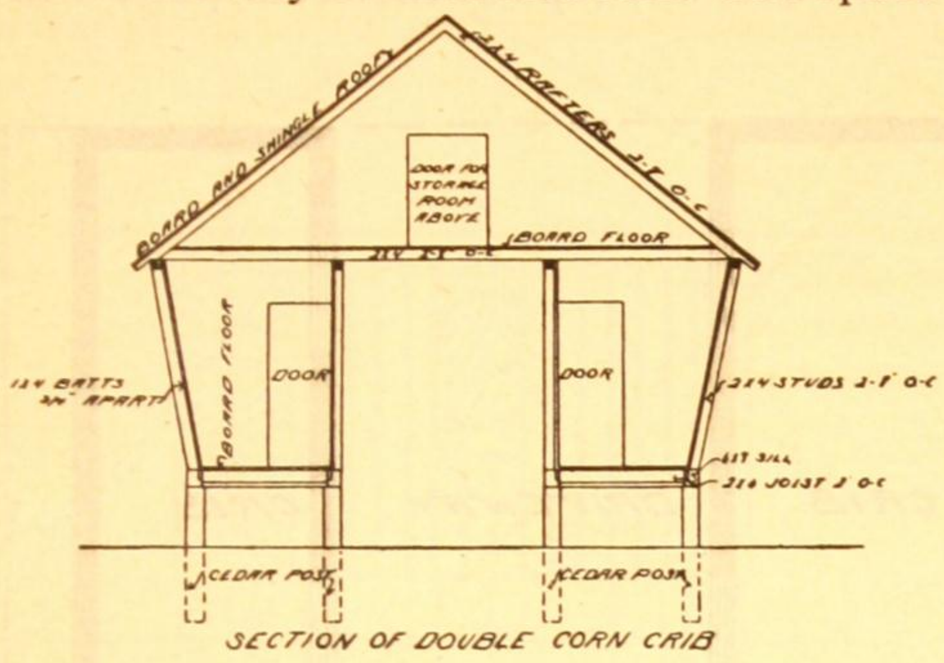


END ELEVATION

DOUBLE CORN CRIB—A105

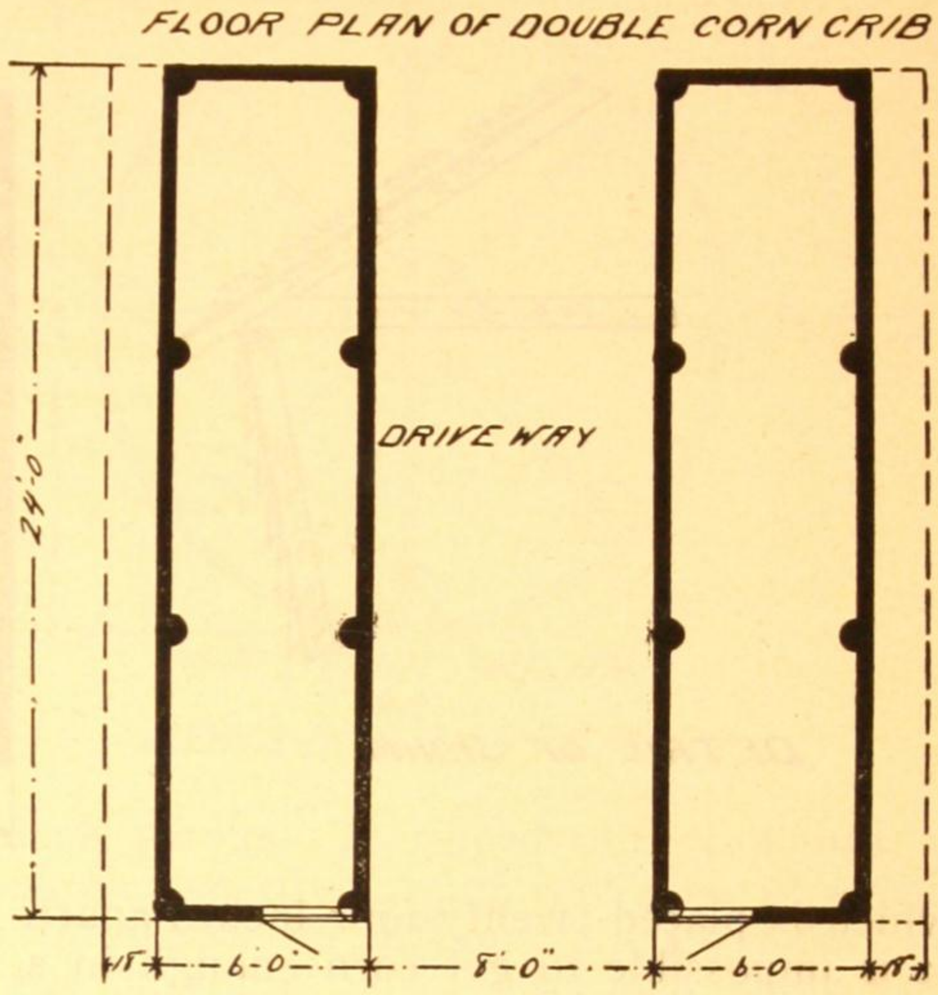
An old fashioned style double corn crib with a drive between and a roof to cover both cribs is shown in plan (A105). This crib is set on cedar posts planted three

and one-half feet in the ground and set up two and one-half feet above ground to be out of the way of mice and rats. The space



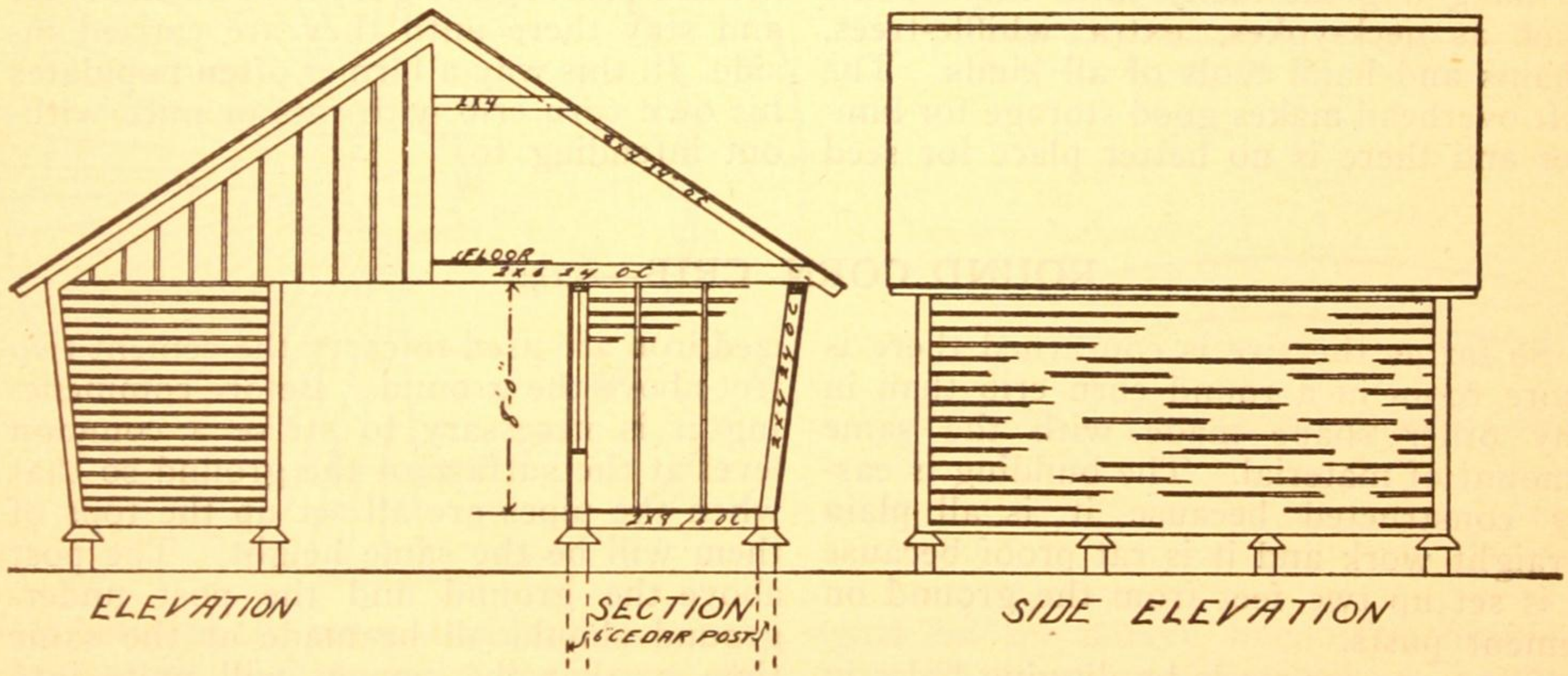
SECTION OF DOUBLE CORN CRIB

between the two cribs makes a convenient place to store a couple of wagons. The doors being at the end, the center space is left free for this purpose. A good many cribs built on this plan have the doors inside opening from the center passage, but if the space is desirable for wagon storage the doors are built at the end as shown. The storage room overhead will be found useful on any farm.

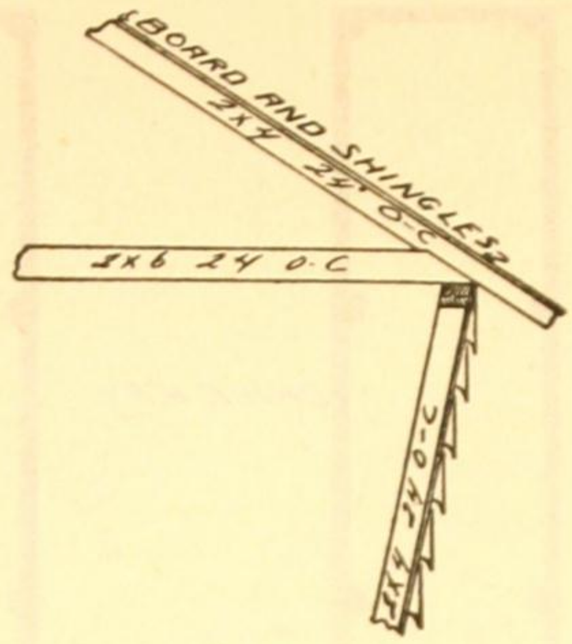


ANOTHER DOUBLE CORN CRIB—A120

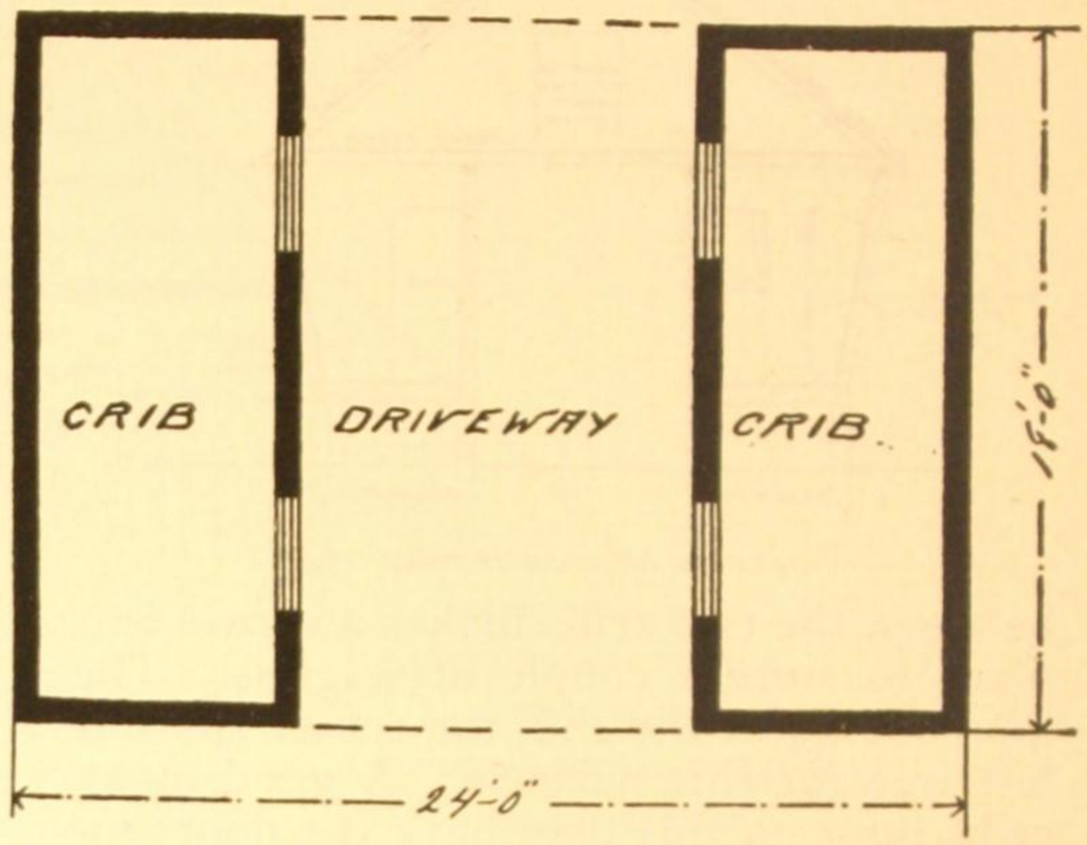
A double corn crib with a storage room overhead and a driveway in the center is shown in the illustration. A peculiar feature of this plan is the siding which is split from two by fours with a band saw in such a way as to get three pieces of siding from one strip. After the siding is ripped out it is run through a sticker to give the curve as shown in the detail drawing. This is an extra protection against beating storms and it is supposed to encourage a draft of fresh air up through each opening for the benefit of the corn. The strips are nearly an inch thick on the



lower edge making them strong enough to hold the corn by being well nailed with wire nails on the outside of the studding



DETAIL OF SIDING



PLAN OF CORN CRIB.

which is placed twenty-four inches apart. It is impossible to get corn enough in a crib of this height to break the slats or shove them out. Corn cribs should not be more than six feet wide because corn will mould in a crib that is too wide.

The driveway in the center of a crib like this is very useful. There is room for a wagon or two and there may be pegs to hang a great many farm implements such as neck-yokes, extra whiffle-trees, chains and hand tools of all kinds. The loft overhead makes good storage for lumber and there is no better place for seed corn than to hang it by wires from the collar beams. The tin pans turned upside-down over the tops of the cedar posts will bother the rats most of the time, although they sometimes find a way to get in. Probably carelessness in leaning something against the crib helps them up in the majority of cases. Rats and mice are often carried in the crib with the corn. They are sharp enough to get into a bushel crate and stay there until they are carried inside. In this way a farmer often populates his own corn crib with rats or mice without intending to.

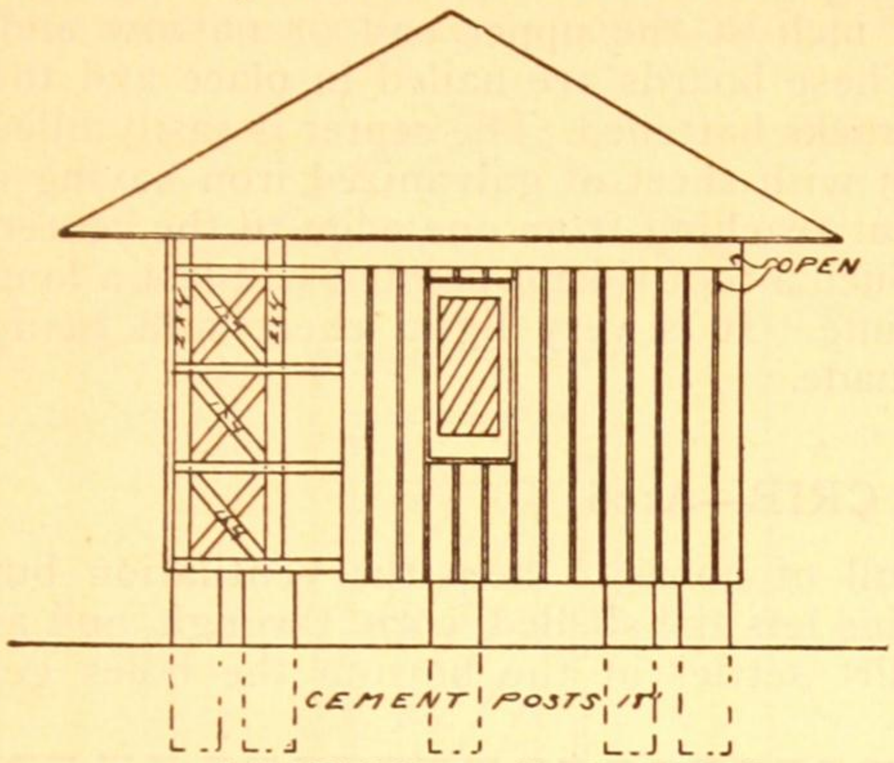
ROUND CORN CRIB—A142

So far as the size is concerned there is more room in a round corn crib than in any other shape made with the same amount of material. The building is easily constructed because it is all plain straight work and it is rat proof because it is set up two feet from the ground on cement posts.

The posts are made by digging holes in the ground three and one-half feet deep and about eight inches in diameter. Lengths of eight inch pipe made of galvanized iron are used to carry the cement two feet above the ground. Before commencing it is necessary to strike a common level at the surface of the ground so that when the pipes are all set up the tops of them will be the same height. The post above the ground and the post underground should all be made at the same time so that the cement will unite into one solid post.

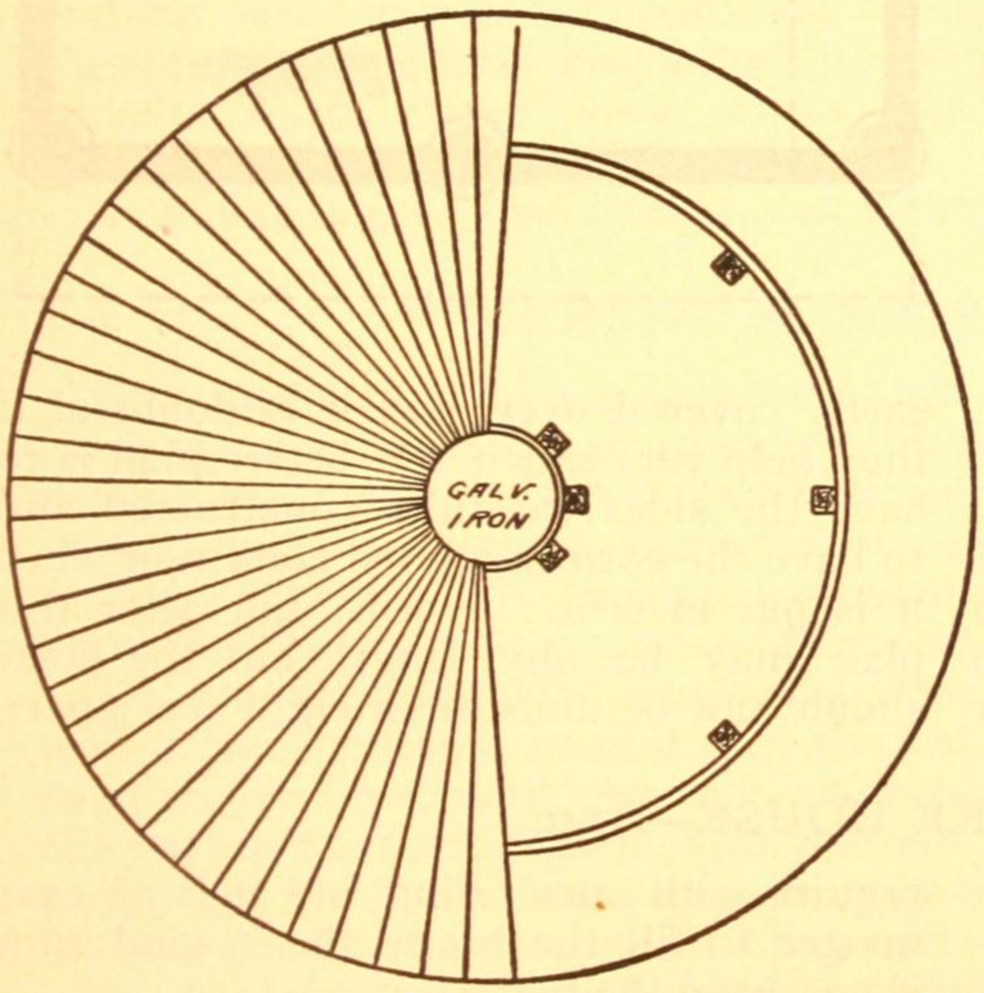
The floor plan shows the way the joists are laid and the circles represent the girts

to which the 1x4 upright pieces are nailed. As the crib is sixteen feet in diameter it is necessary to have a ventilator in the



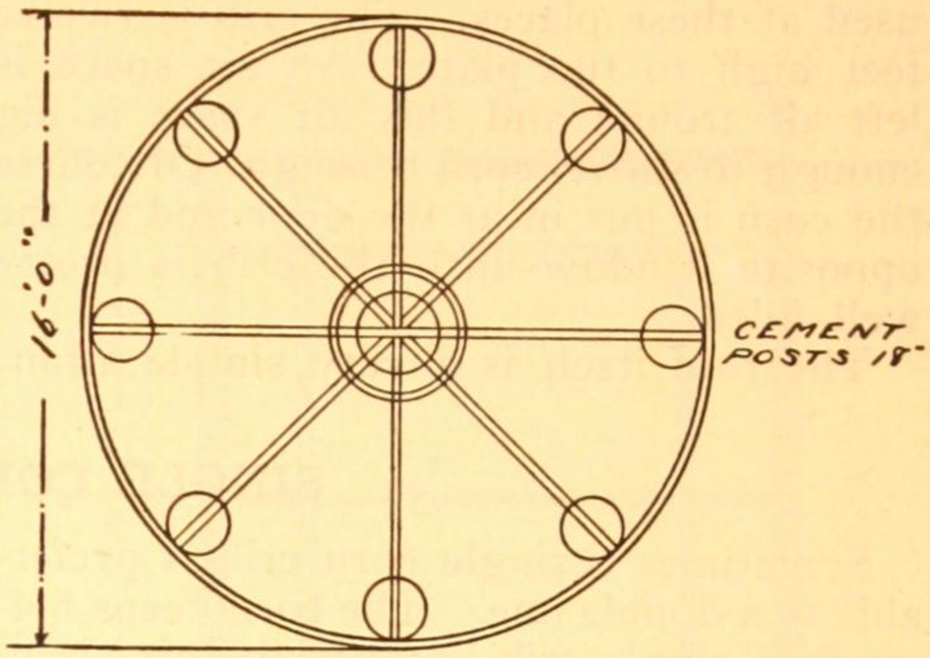
SECTION AND ELEVATION OF ROUND CORN CRIB

middle. Ordinarily it is not advisable to have a body of corn more than six or seven feet in diameter. By making the inner circle three feet we have six and one-half



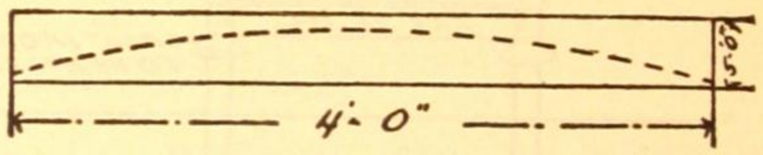
feet between the inner strips and the outer strips and as there is no floor over the joists in the center the air can pass up through the three foot ventilator easily.

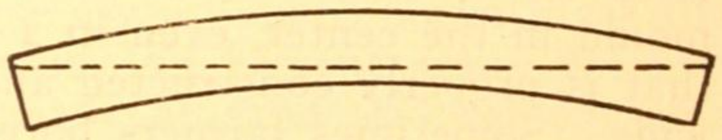
The round girts may be made in two ways, either by using thin stuff and nailing one layer upon the other, breaking joints, or they may be ripped out of two



FLOOR PLAN OF ROUND CORN CRIB

inch planks. If ripped out of planks a single saw-cut through each piece of plank will shape the sections, cut as shown in the diagram. Use two inch plank ten inches wide cut to four foot lengths. Make segments enough to build up all the girts necessary by ripping the short planks lengthwise through the middle, then rip





DETAILS OF ROUND CORN CRIB

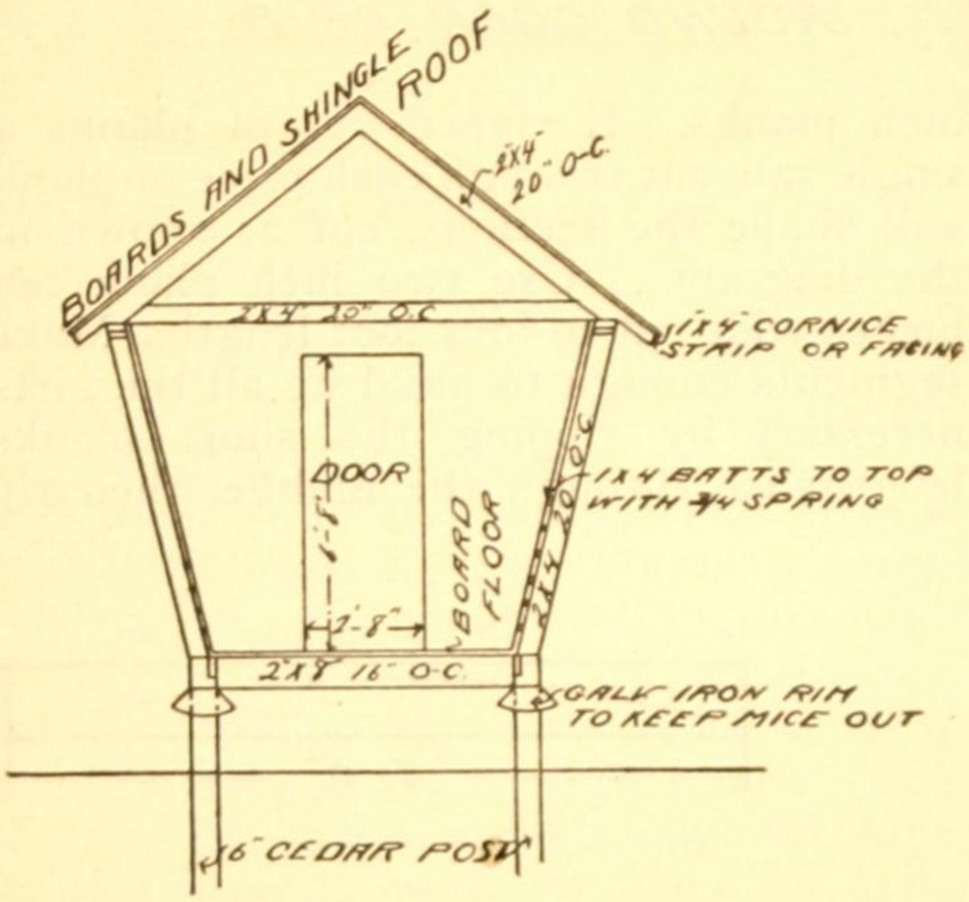
again on the curved line. The finished girts are about 4x4¾ inches. There is very little waste. The roof is supported by a similar girt and this upper girt or plate is supported by extending some of

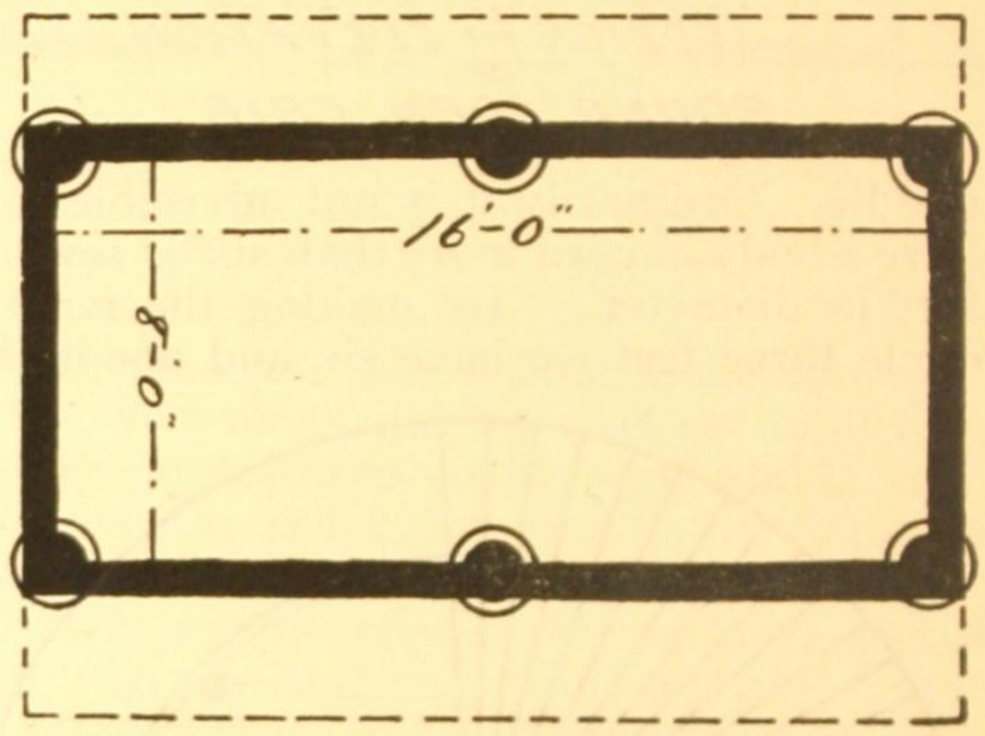
the one by four pieces above the others as shown in the drawing. These extension strips may be doubled or two by fours used at these places. The crib is twelve feet high to the plate. An air space is left all around and this air space is big enough to shovel corn through. Of course the corn is put in at the door and at the opposite window until the crib is pretty well filled.

The roof itself is a very simple affair. It is supported by the plate and the ventilator shaft. The roof boards are 12 feet long and cut 11 inches at the wide end and 1 inch at the upper end or narrow end. These boards are nailed in place and the cracks battened. The center is easily filled in with sheet of galvanized iron having a cut reaching from one edge to the center. Such a roof if kept painted will last a long time. It is very light, cheap and easily made.

SINGLE CORN CRIB—A106

Scmetimes a single corn crib is preferable to a double one. The corn keeps better in a single crib because the air circu-





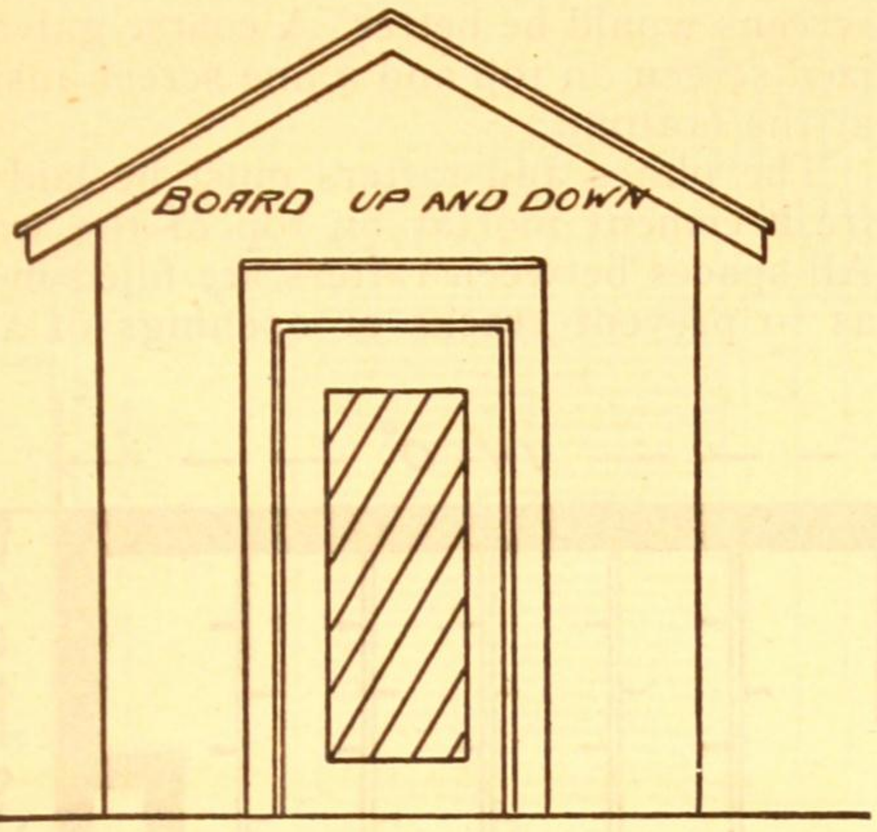
lates all around. Sometimes corn will mould in the center, even in a good crib that is properly constructed and not too wide. Sometimes farmers bore the floor full of holes to help the ventilation but this lets the shelled corn through and as dirt settles at the bottom the holes get easily covered over, and it is doubtful if they help very much. A better plan is to have the sides carefully constructed and to have the corn in a good condition when it is put in crib. A crib built after this plan may be any length but the posts should not be more than eight feet apart.

CHEAP SMOKE HOUSE—A149

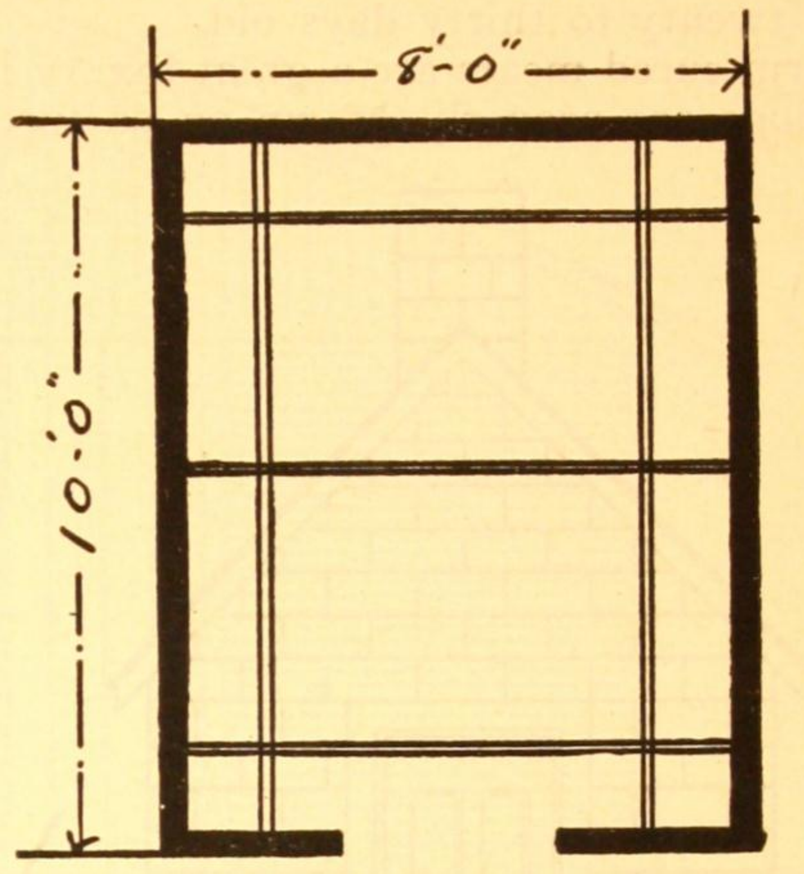
It is not necessary to do without a smoke house on a farm. A small building that will answer the purpose may be had with very little outlay. The plan (A149) shows a little wooden smoke house eight by ten feet with sides eight feet high. It is big enough to hold as many hams and shoulders as farmers' families usually require with once filling, but it is an easy matter to fill the house the second time if you have the meat.

This little house requires no frame work at all. All you need is a four by four for sills and a two by four for plates and some more two by fours for rafters. You can even dispense with the rafters, except the

two end pairs, if you want to make a board roof. It is better however to make a good shingle roof, then you have something that will last as long as you want it. For



ELEVATION



PLAN OF FLOOR

boarding you just take sixteen foot boards and cut them in two in the middle. For the front and back use twelve foot lumber and the waste pieces work in for roof boards if shingles are used.

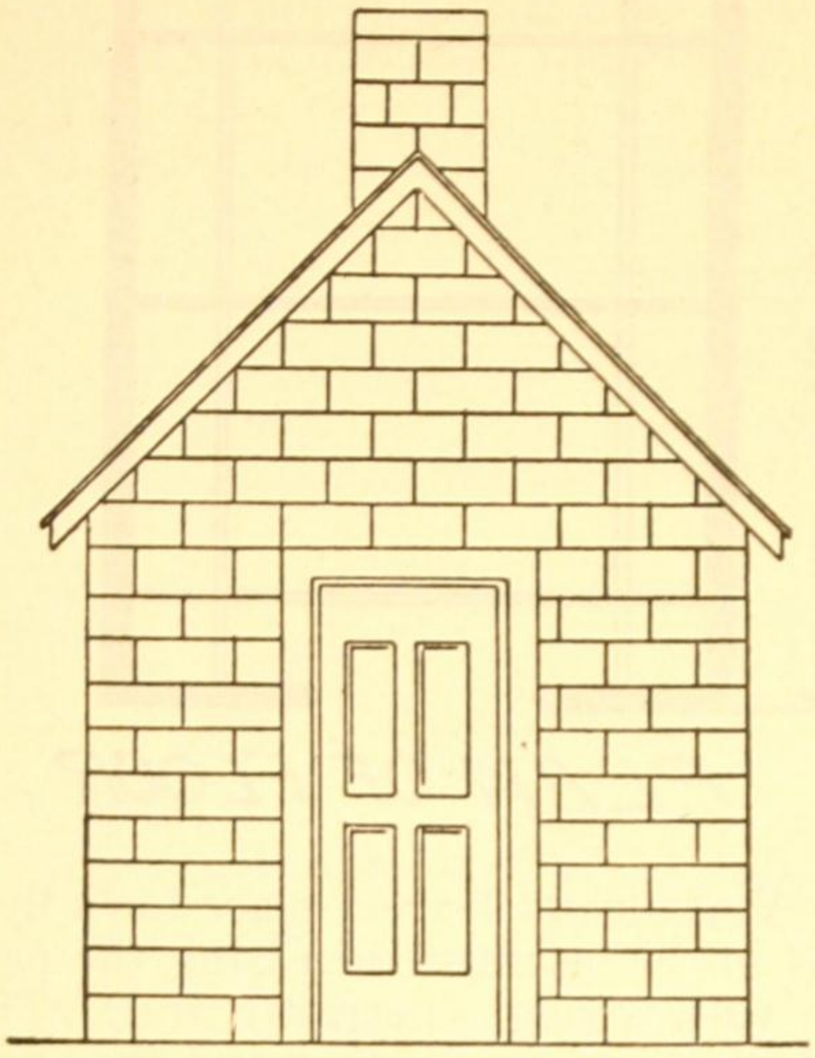
A smoke house like this is not tight enough to keep the meat in after being smoked. It is better to wrap it in paper, then roll it up in thin cotton and sew it up. You musn't leave a place for a fly to crawl in. You must then hang the packages with strings, perfectly free. They must not touch each other and they must not touch anything else. They need a cool place but not damp.

CEMENT BLOCK SMOKE HOUSE—A147

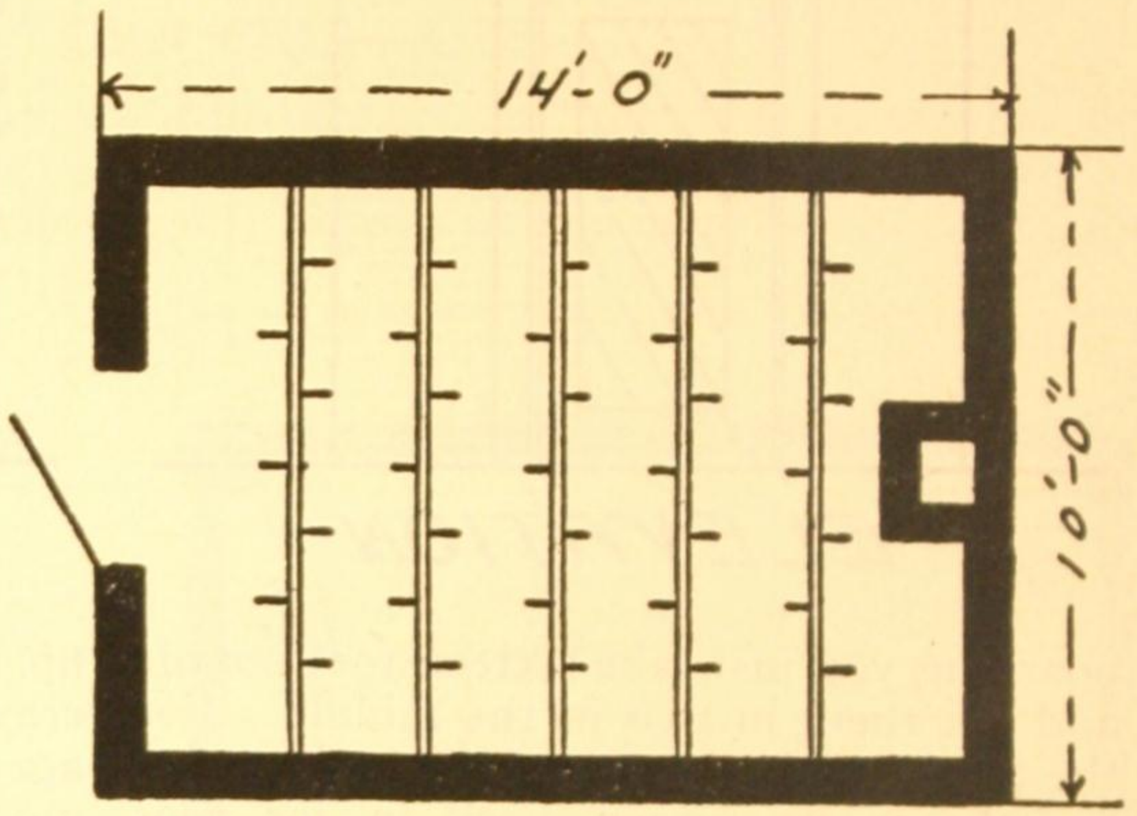
Every farm should have a smoke house, the better the house the more satisfactory will be the meat. The plans shown of (A147) is for a house constructed of cement blocks. It should be placed conveniently near the house on a raise of ground and a foundation started below the frost line. A trench should be dug, say 3½ feet deep partly filled with concrete made of one part of Portland cement, two and one-half parts sand and five parts of broken stone or gravel, ramming or puddling carefully. If plenty sand may be conveniently had, it would be a good plan to secure a block machine and have the blocks made on the ground. In making the concrete blocks, use a mixture of one part Portland cement, two and one-half parts sand and five parts of crushed stone or gravel. The use of crushed stone or coarse material for the back of the block saves a great deal of cement and at the same time gives a much better block than where sand and cement alone are used. Blocks made of sand and cement alone and merely dampened are not concrete blocks, but on the contrary are simply sand blocks. The very term of concrete suggests coarse material and plenty of water. Great care should be taken in mixing the different aggregates and they should be mixed thoroughly dry and after they have been thoroughly mixed add water. After the blocks have been made they should be set aside to be cured, and while curing, they should be sprayed thoroughly

from seven to ten days. This spraying should commence about twelve hours after the block has been made. Blocks should never be used in building until they are from twenty to thirty days old.

Farm cured meats are a great luxury if the hogs are properly grown on pasture.



ELEVATION



FLOOR PLAN

With a house like this and good pork to start with, a farmer can supply his table with good home-made bacon, hams and shoulders the year round.

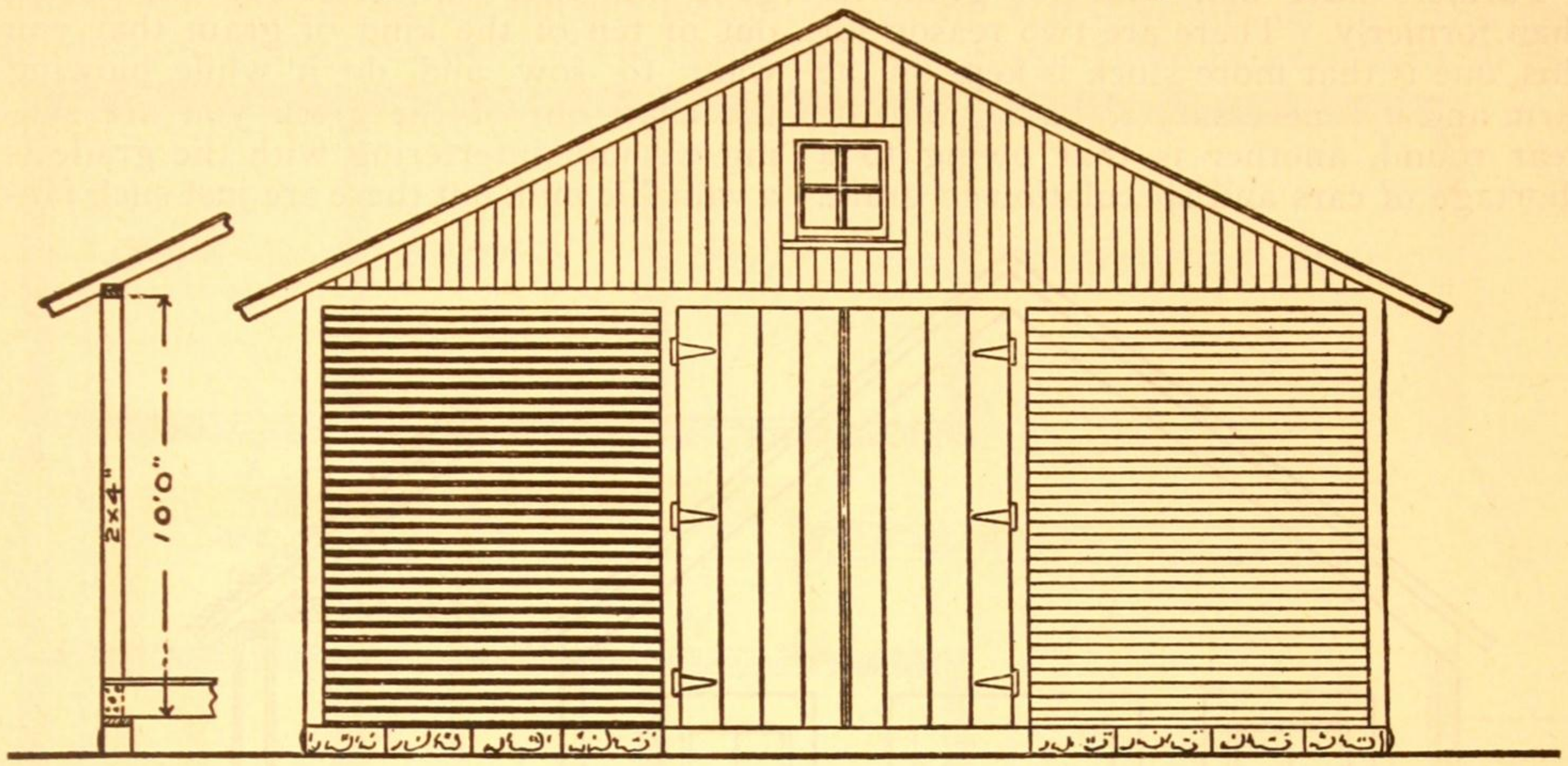
The best smoke is made from green maple wood. Probably clean corn cobs come next. With a smoke house thoroughly well built to keep out flies and other insects the meat may be smoked in the spring and left in the smoke house all summer. By way of precaution a very little smoke may be started once or twice a month or some of the meat may be covered with paper and cloth. Very much depends on the house. If the house is too dry there will be too much evaporation and the meat will become dry; if the house is too damp it will be inclined to mould. If it is intended to keep the meat in the house after the smoking process is completed it will be necessary to fit the door very carefully. The frame must have a couple of ridges all round and cement worked in tight between these ridges to make tight joints. The ventilator on top must be fitted with a fine screen. Two screens would be better. A coarse galvanized screen on top and a fine screen inside at the bottom.

The plates and rafters must be laid in fresh cement mortar on top of the wall. All spaces between rafters are filled in so as to prevent cracks or openings of any kind. Cross poles to support the meat are made of four by fours with half inch pegs inserted from the sides. The pegs are set at an angle of about thirty degrees. This will permit hanging the pieces of meat in the old fashioned way of cutting a slit in the skin in the bone end. If strings are preferred the same kind of peg may be used. Nails are not to be recommended for this purpose.

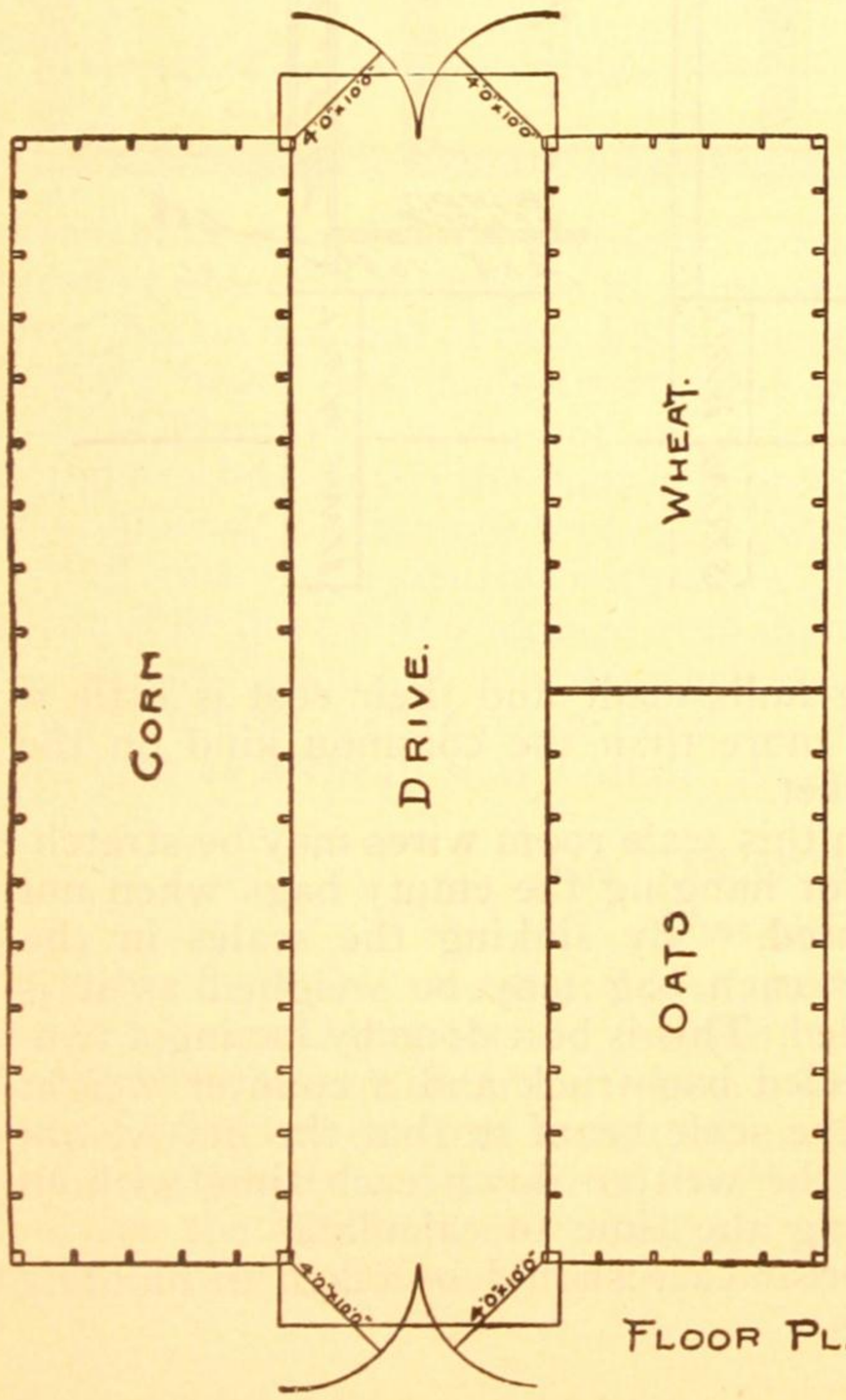
Farmers living within easy distance of a large city may work up a good trade in farmer cured meats by selling direct to consumers, thereby saving both the packer's and grocer's profits. Only thrifty young pigs, not too fat, and in prime condition are suitable for a trade of this kind, but farmers have the pick and they may just as well select the best. Every person living in the city enjoys a change in meats as well as in other things.

CHEAP GRAIN BUILDING—A128

A cheap building to hold grain and corn is shown in this design. It is a low building with studding only ten feet long, but that is about as high as a person cares to



FRONT ELEVATION.



FLOOR PLAN.

pitch corn or threshed grain. Just ordinary one by four pine strips spaced to ¾ inch are nailed on the outside of two by four studding to make the corn crib, but the wheat and oat bins of course are made tight all around and a little extra work is put on the floor.

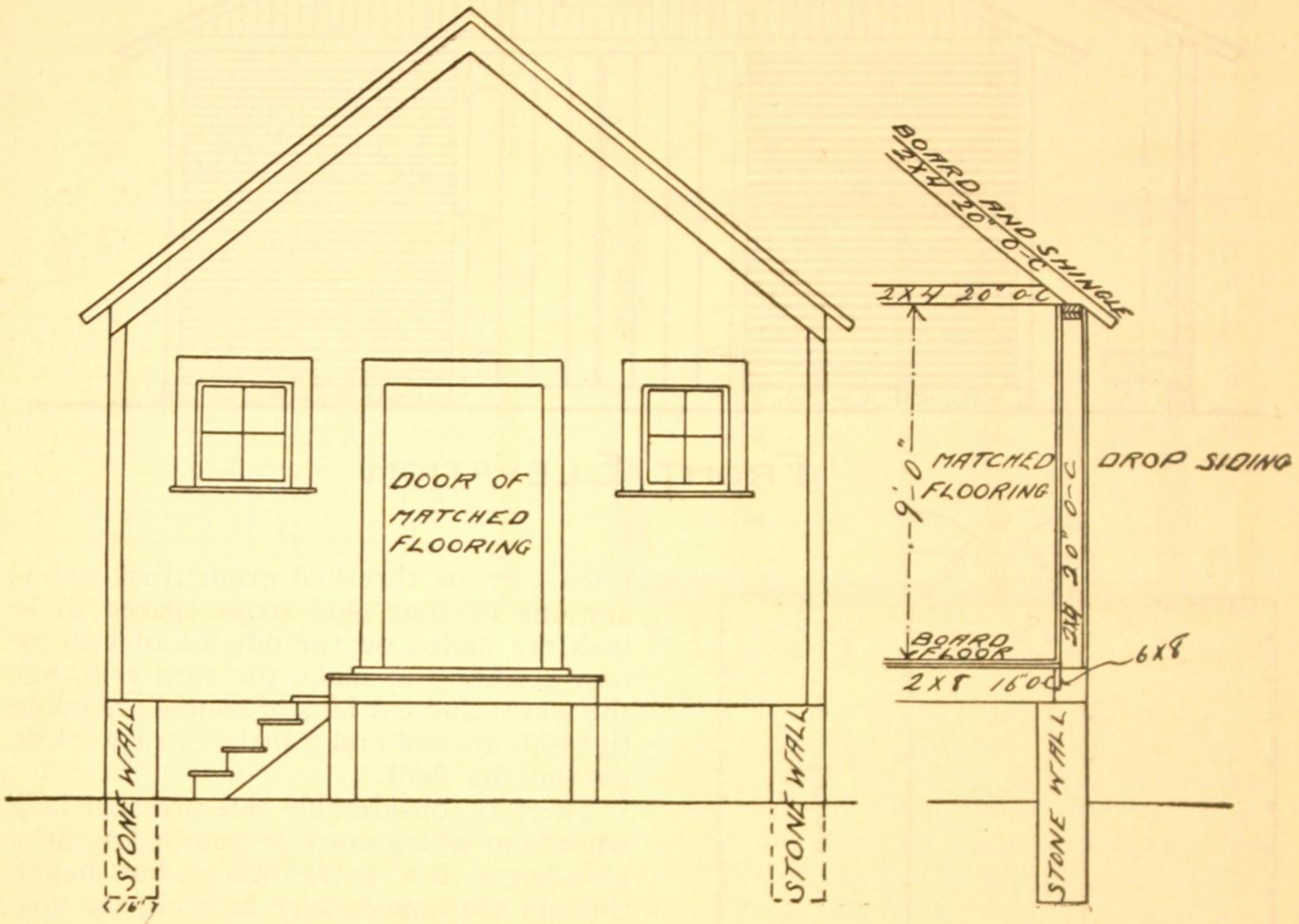
There is considerable side pressure in a wheat bin which must be guarded against by using a few extra braces, but heavy timbers are unnecessary in a bin the size of this one. This building may be floored overhead for storage, or the bins may be left open to the roof. By leaving the space open the building will be lighted sufficiently by the small window in each gable.

It is not intended to floor the driveway unless it is needed when using a fanning mill to clean grain, but the building would be all the better for having a good solid floor the full size. This plan provides for a building thirty by forty feet. Thirty feet is wide enough for convenience either in building or for use afterwards, but of course it may be any length.

GRANARY—A107

Farmers have more use for granaries than formerly. There are two reason for this, one is that more stock is kept on the farm and it is necessary to have grain the year round, another is that owing to a shortage of cars and speculation in grain, prices are not always satisfactory in the fall and it pays to hold grain to sell later.

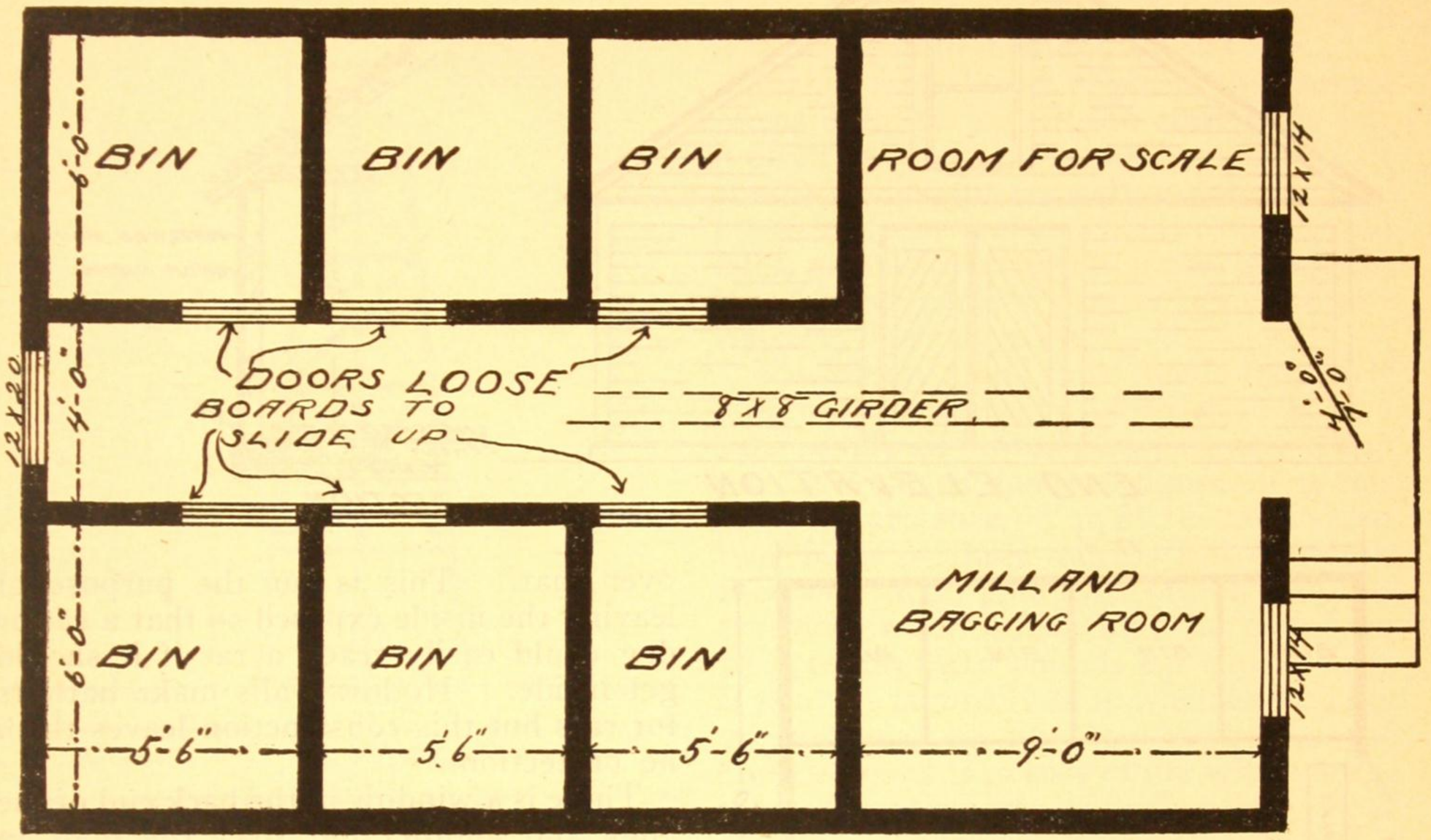
Then, more attention is now being paid to seed. A grain house like this with a place for scales and a fanning mill is a very valuable addition to any farm. The different kinds of grain may be stored in the bins at threshing time and run through the fanning mill when taken to the warehouse for sale. By rigging the mill carefully a small proportion of the largest, heaviest grains may be retained for seed without adding anything to the cost. A good mill that will select say one bushel out of ten of the kind of grain that you want to sow and do it while blowing the chaff out of the grain you are selling without interfering with the grade is a valuable mill, but there are just such fanning mills made and their cost is little if any more than the common kind on the market.



In this scale room wires may be stretched for hanging the empty bags when not wanted. By sinking the scales in the floor each bag may be weighed as it is loaded. This is best done by having a two-wheeled bag truck and a counter weight on the scale beam so that the net weight may be written down each time without taking the time to calculate.

Great care should be taken in building

a granary to have it rat proof. The wall of course must go below the frost and it is a good plan to put a three inch tile all around the bottom on the outside which answers for drainage as well as to keep the house should be set up well from the ground for two reasons, it should be the height of the wagon for easy loading and unloading and it should be high and dry because grain should be kept from all un-



rats from burrowing under the wall. Some farmers object to a plaform in front of the door just on account of rats, but if the door is made heavy and made to fit tight with a bit of hoop iron at the bottom, rats will not get in that way if the door is kept shut. It is difficult to arrange a plan of getting in and out conveniently without a platform. The door is too high to step up and if you have a kind of stair to reach it you might just as well have a good loading platform as a cheap shaky affair. A grain necessary moisture. There is moisture enough in the air in damp weather anyhow without taking chances on moisture from the ground.

The doors to the bins are made of loose boards dropped into grooves so that one board may be put in or taken out as required. A little extra expense put into the quality of the flooring is money well laid out. The floor should be free from shake and fairly free from knots, at least there should be no black knots.

RAT PROOF GRANARY—A141

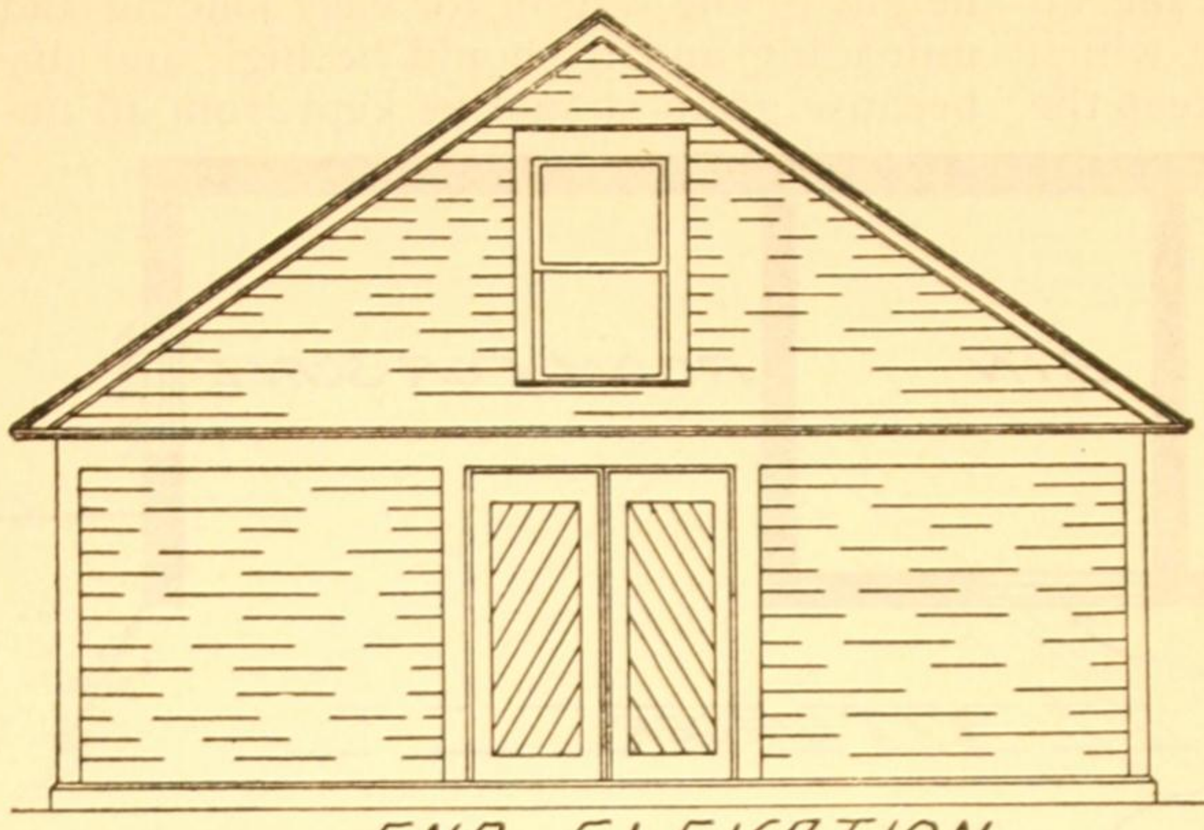
Cost of Blue Prints, $5.00

A dry floor and one that is ratproof is made by excavating for the foundation of the granary about six inches deep. Then pound in three or four inches of cinders and lay the sills and joists on the cinders.

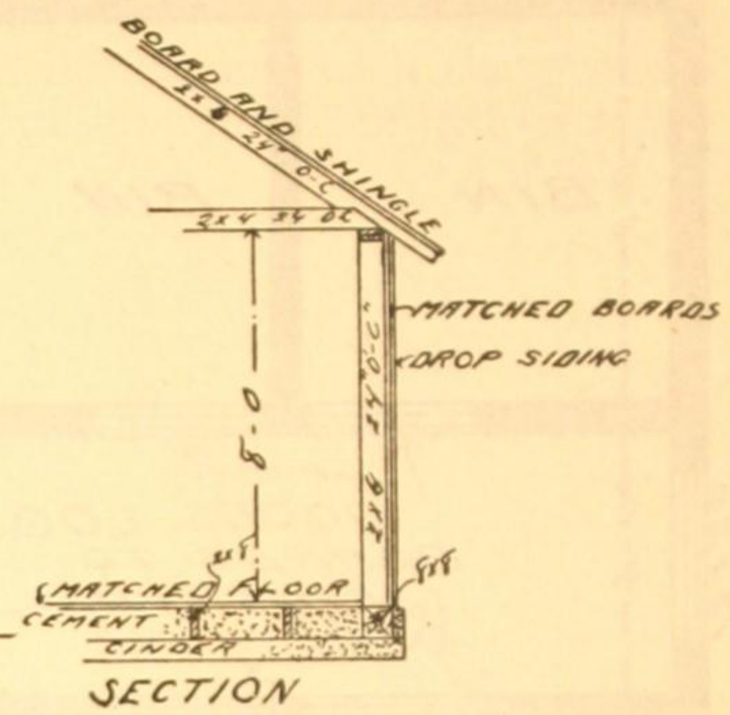
After the building is up and enclosed make cement concrete by mixing one part cement, three parts sand and four parts gravel or broken stone. Fill in with this concrete to the tops of the joists, then while the concrete is soft put down the matched floor, nailing it right into the soft concrete. As soon as the floor is finished shut the building up tight and bank

around the outside to keep the air away from the concrete so it will dry slowly.

The matched boarding is put on the outside of the studding and the siding nailed



END ELEVATION



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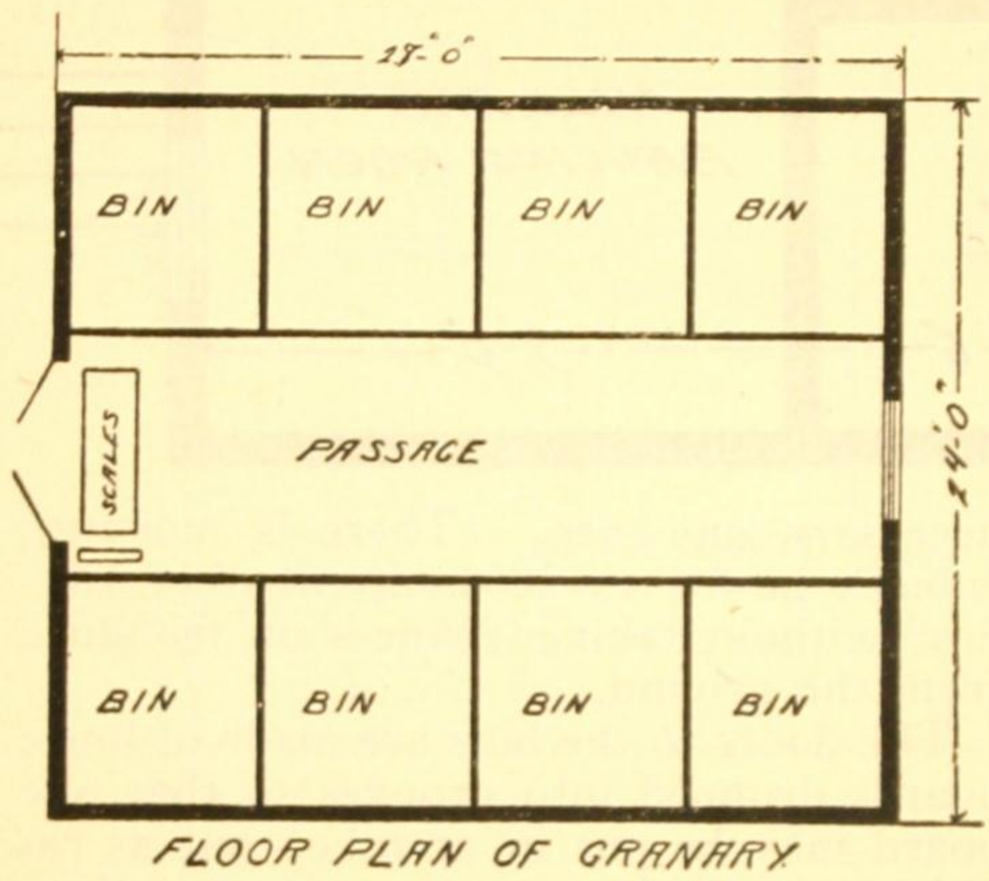


FLOOR PLAN OF GRANARY

over that. This is for the purpose of leaving the inside exposed so that a cat or dog could easily reach a rat if it should get inside. Hollow walls make harbors for rats but this construction leaves them no protection.

There is a window in the back end of the alley and another one over the door in front. The doors are made heavy and swing out. They close against heavy jambs so that rats and mice have very little encouragement to get in at the door. The scales are let in the floor flush. Provision must be made for this before the concrete is put in.

FARM HOUSE WATER SUPPLY UNDER PRESSURE—A226

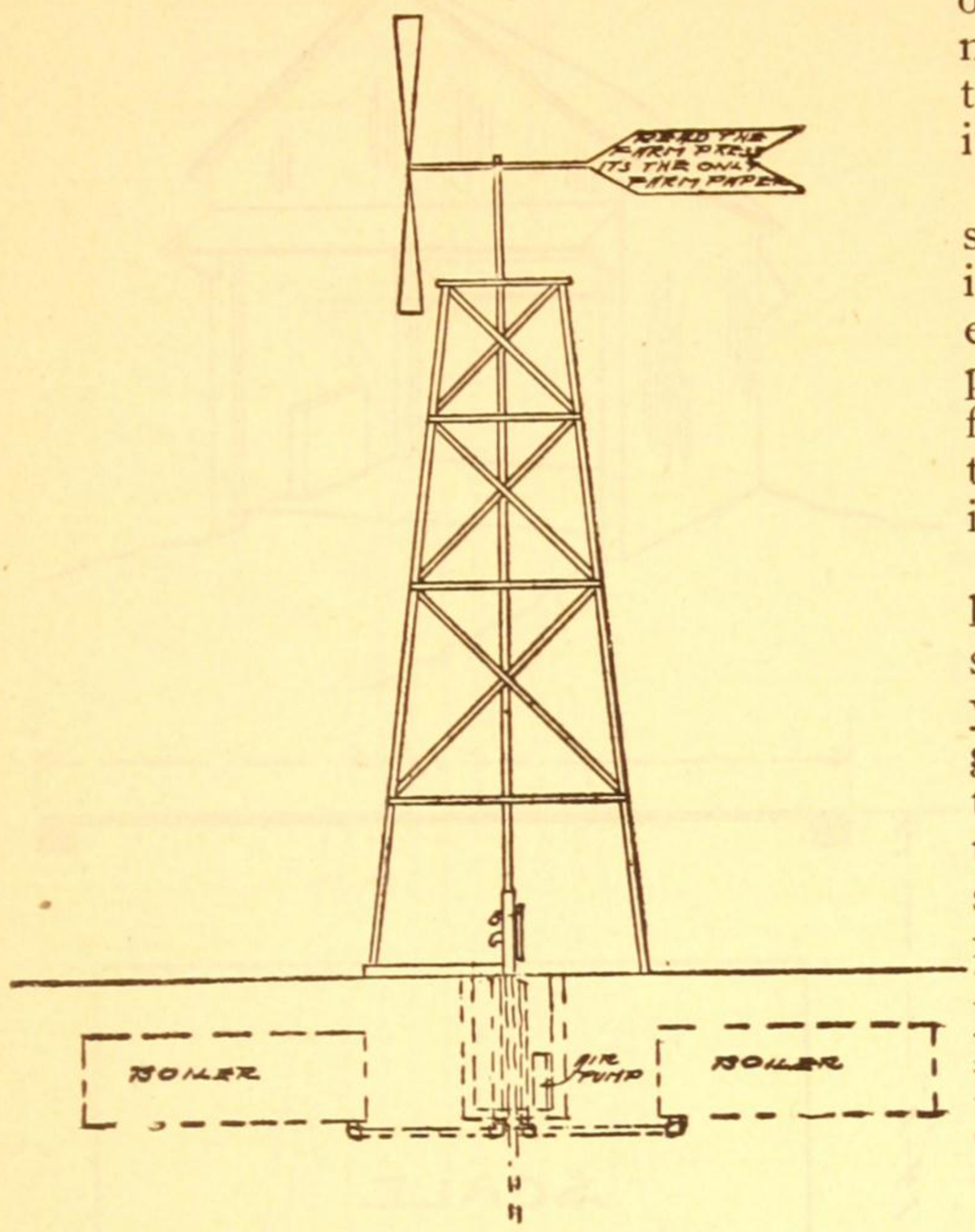
It is just as easy and just as cheap to have a house water supply under pressure in the country as it is in the city because city rents and taxes are sufficient not only to pay for the cost but to make up for the stealings of dishonest municipal employees and the aggregate to the property holders foots up more than the interest on the cost of a sufficient private water supply system in the country.

We now have powerful windmills that will do the pumping and automatically attend to the work without very much supervision and with a very light annual expense for oil and repairs.

For extra large houses and where a great deal of stock is kept sometimes a gasoline engine is more satisfactory than a windmill but this is a question to be decided by local conditions because either one is all right when properly placed and connected.

The very first consideration is a good well. You must have plenty of water at

all seasons and you must have pure water. It is more difficult to get pure water in the country than it is to get a plentiful supply



of water that is not especially good. The Illinois Sanitary Commission is responsible for the statement that most country wells contain disease germs, especially typhoid and dyphtheria.

There are two kinds of tanks in use; one is the ordinary elevated windmill tank that is in common use all over the country and the other is the underground pressure tank that has not yet attained universal popularity probably because it is new, but the underground tank has many advantages over the other. The water is cool in summer and it does not freeze in winter and the underground tank is cleaner because it is not open to dust and insects.

To buy a steel tank to put in the ground seems quite an expense to start with, but it often happens that an unsafe steam boiler may be bought very cheap for this purpose. A boiler maker will take out the old flues, patch the uncertain places and make the old shell perfectly water tight and satisfactory in every way.

The underground tank should be a little larger than necessary in order to have a safe supply of water at all times. Then you have the air space to figure on as this gives the pressure. You fill the tank about two-thirds or three-fourths full of water, then with an air pump you put on the pressure you want, which may be anywhere from ten to forty pounds per square inch. If your air pump is handy when needed the pressure may be quickly increased to one hundred pounds in case of fire which is another advantage of the underground tank system. By having a large tank and a large air space you get a steadier supply because the air pressure does not decrease so fast when you draw off water for use.

Every new country house should be piped with water and gas. It should be wired with electricity and the plumbing should be equal to any city residence. Farmers are entitled to all the improvements going. If they don't have them it is their own fault.

SCALE HOUSE—A187

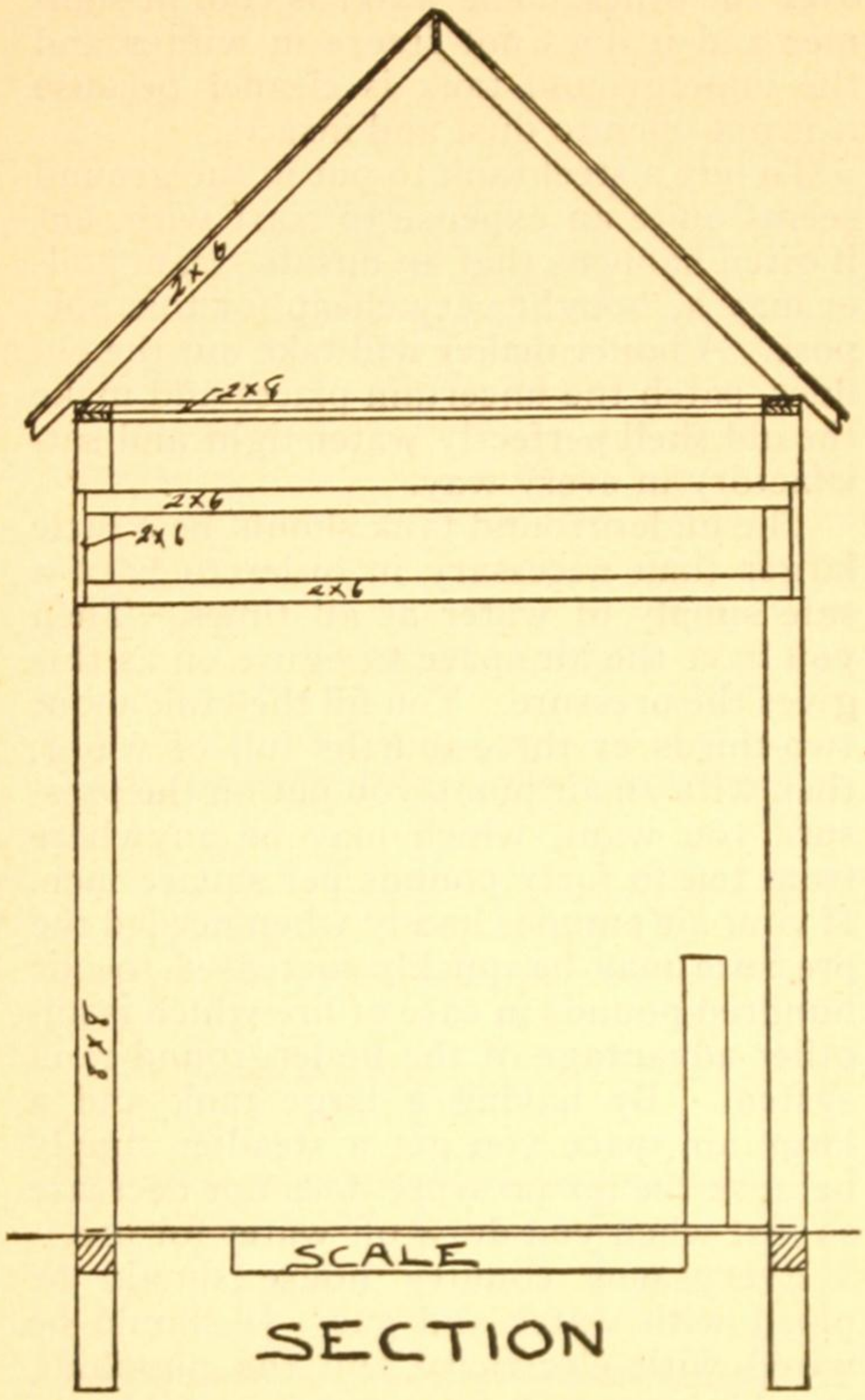
This is a drawing of a good scale house covering an eight by fourteen foot platform, four ton scale. The building is fourteen by sixteen feet base with doors twelve feet high, allowing a large load of hay to be driven in upon the scales. The sides of the house are used for hanging and placing tools and other small articles not wanted in the barn.

Every up-to-date farm should have a good pair of scales big enough to weigh a load of hay or a drove of hogs or sheep. Enough money is lost on every farm by guessing at weights to pay for a good set of scales, and besides this there is a great satisfaction in knowing what things weigh.

In feeding cattle, hogs or sheep for market, weighing at regular periods is ex-

tremely valuable. It is impossible to know whether stock is doing as well as it should do unless tab is kept on the increase in weight.

After this scale house is built make a good solid rack to surround the scales to pen up stock at weighing time. Make the rack high enough to hold horses, strong enough to hold a bull and tight enough for hogs. Wire fencing may be used to advantage, stretched on to wooden frames.



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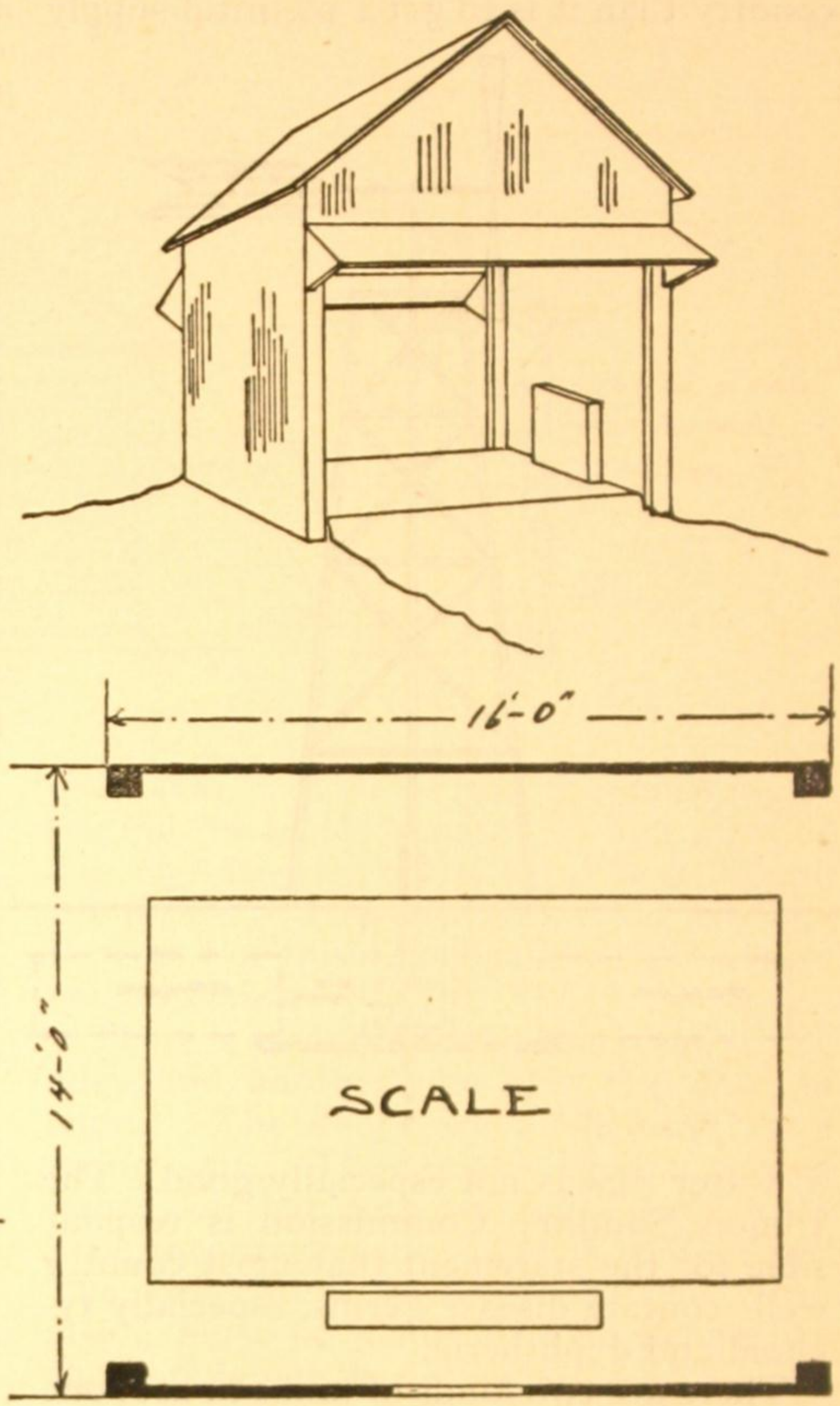
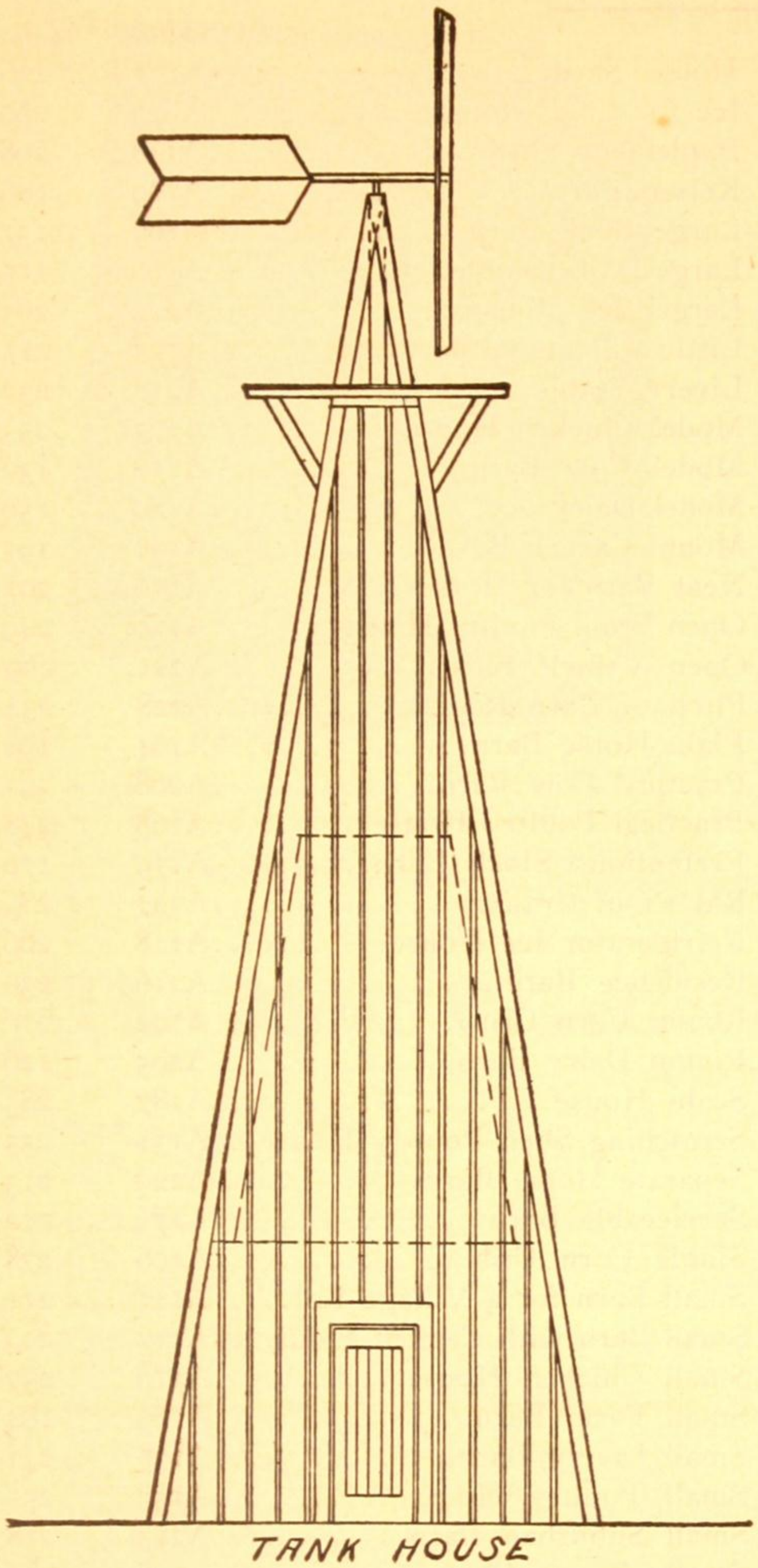


PLAN

TOWER TANK HOUSE —A145

Where a water pressure is wanted it is often a good plan to put the water tank in the windmill tower. In plan (A145) the tank is shown in the dotted lines. It is placed ten feet above the ground and the tank itself is fourteen feet high by ten feet in diameter at the bottom.

In placing a tank like this it is necessary to carry a three inch pipe through the tank and pass the pump shaft through this pipe. The pipe is screwed into a flange at the bottom and the flange is bolted to the bottom of the tank to make it thoroughly water tight. The pipe must be steadied



TANK HOUSE

at the top and the shaft must have a bearing, both above the tank and below it so it won't scrape on the pipe. The well and pump of course are directly under the tank in the center of the tower.

The outside boarding is made double and lined with paper to be warm in winter.

There is generally some drip from a tank placed like this for which reason the room below is seldom made use of for any purpose, but a few farmers have utilized this room for a bathroom. They make a cement bottom with a drain to carry off the surplus water and put in a shower bath connected with a pipe from the tank. A shower bath is the most convenient and probably the most healthful of any kind of a bath. At any rate it is easily kept clean.

There is no reason why the farmer or his men should be denied the privilege of getting a bath whey they want it. There are bathrooms in almost all city houses and there should be bathing conveniences on every farm. By placing a stove in this room under the tank it could be made comfortable in winter as well as summer, and a stove with a water heater attached to the tank would give a water pressure so that the shower could be made any temperature desired.

The height of this tower is forty feet to the windmill. Of course, the height of a windmill tower must depend upon its location. If the tower is built on high ground it is not necessary to go up so high unless the windmill is surrounded by high buildings or trees.

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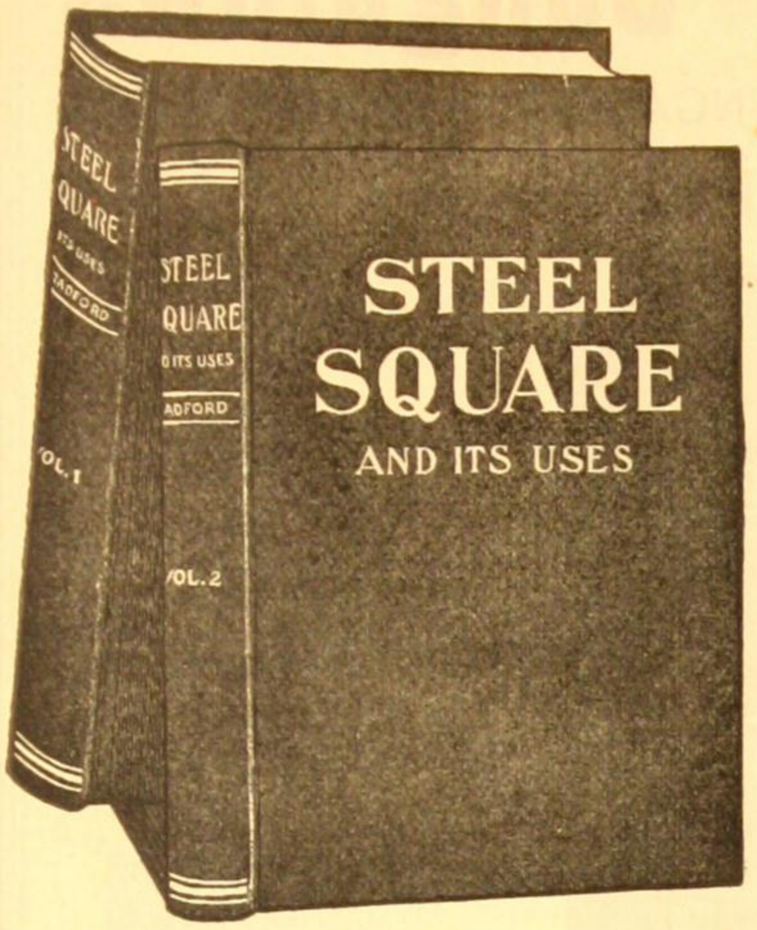

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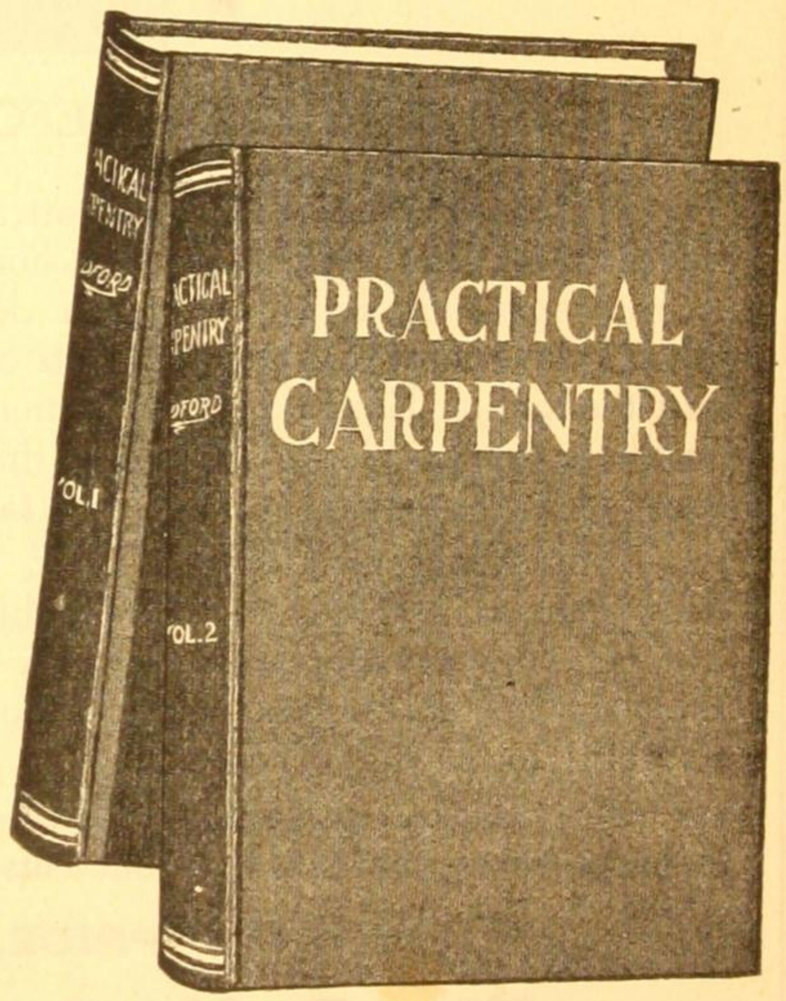

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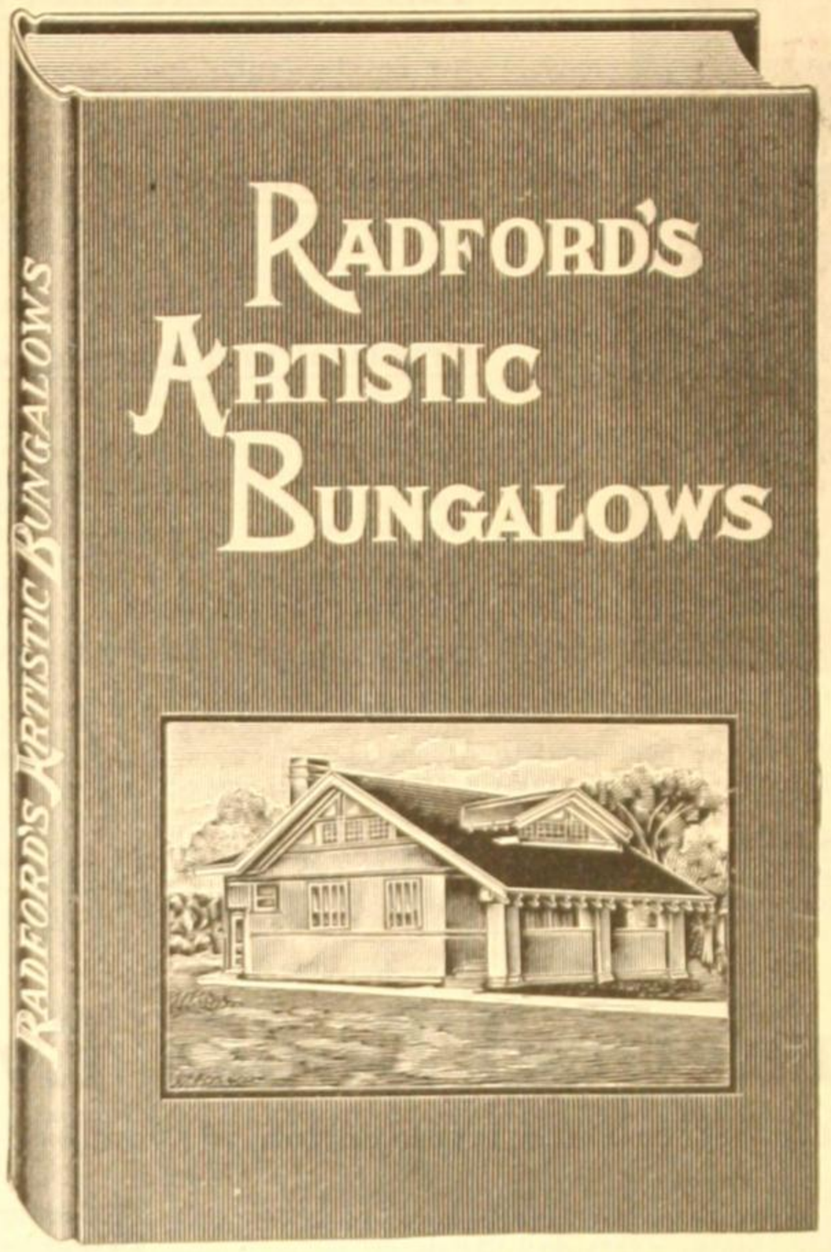

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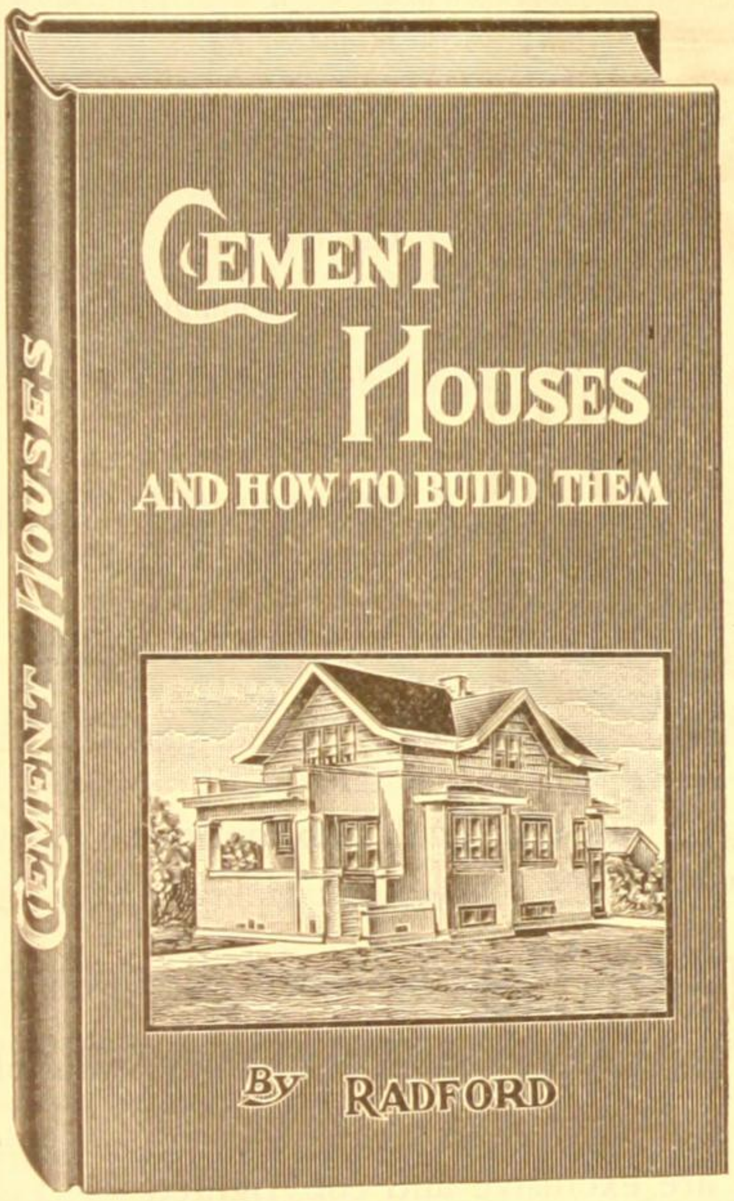

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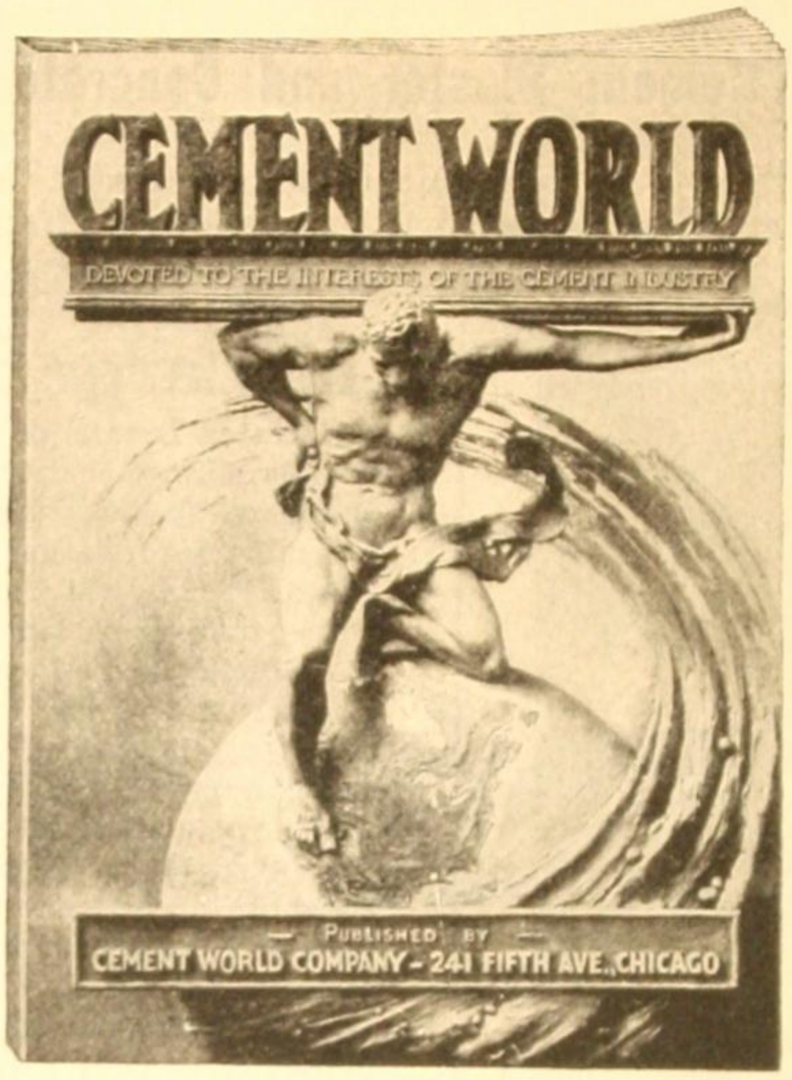

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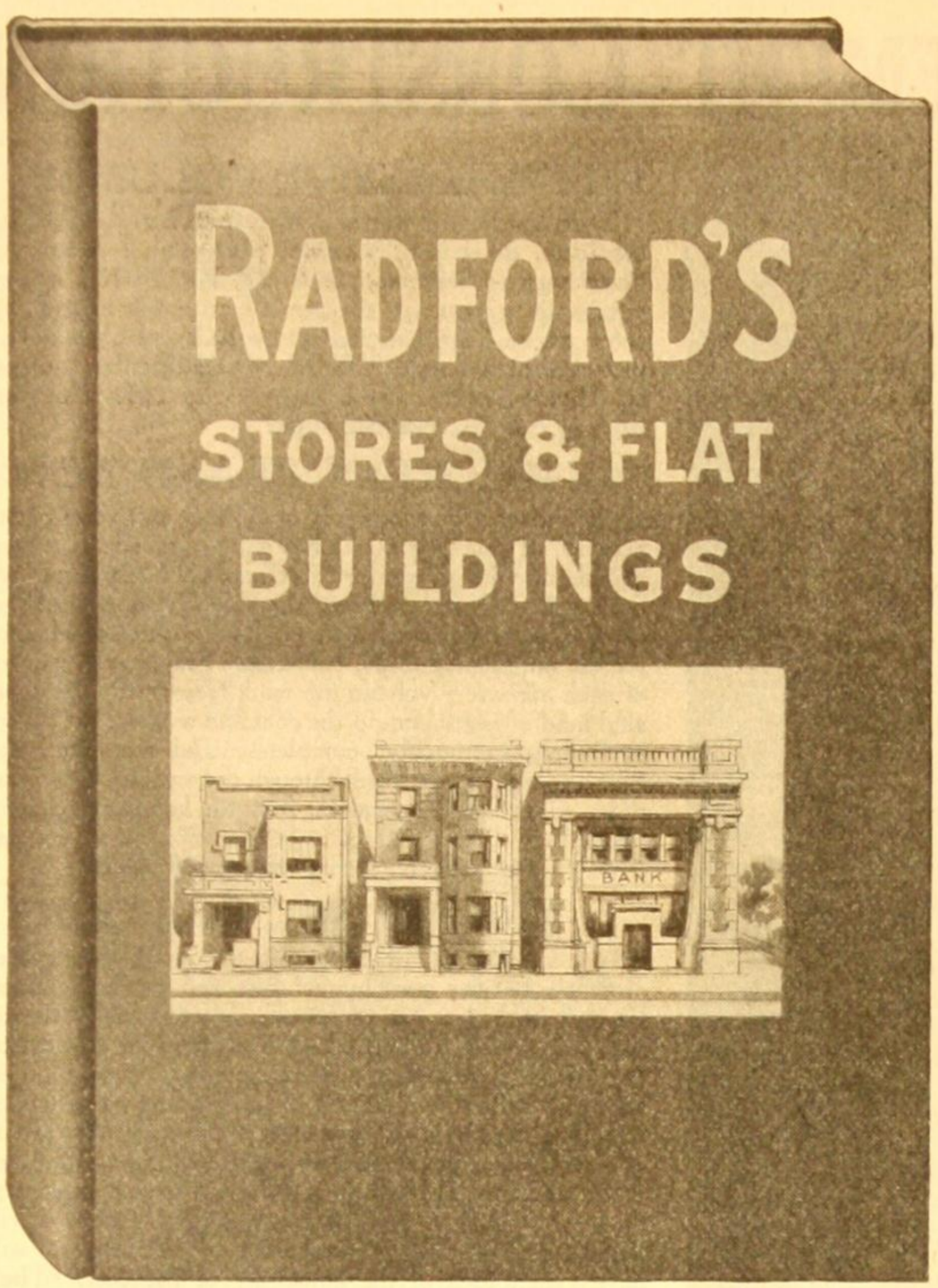

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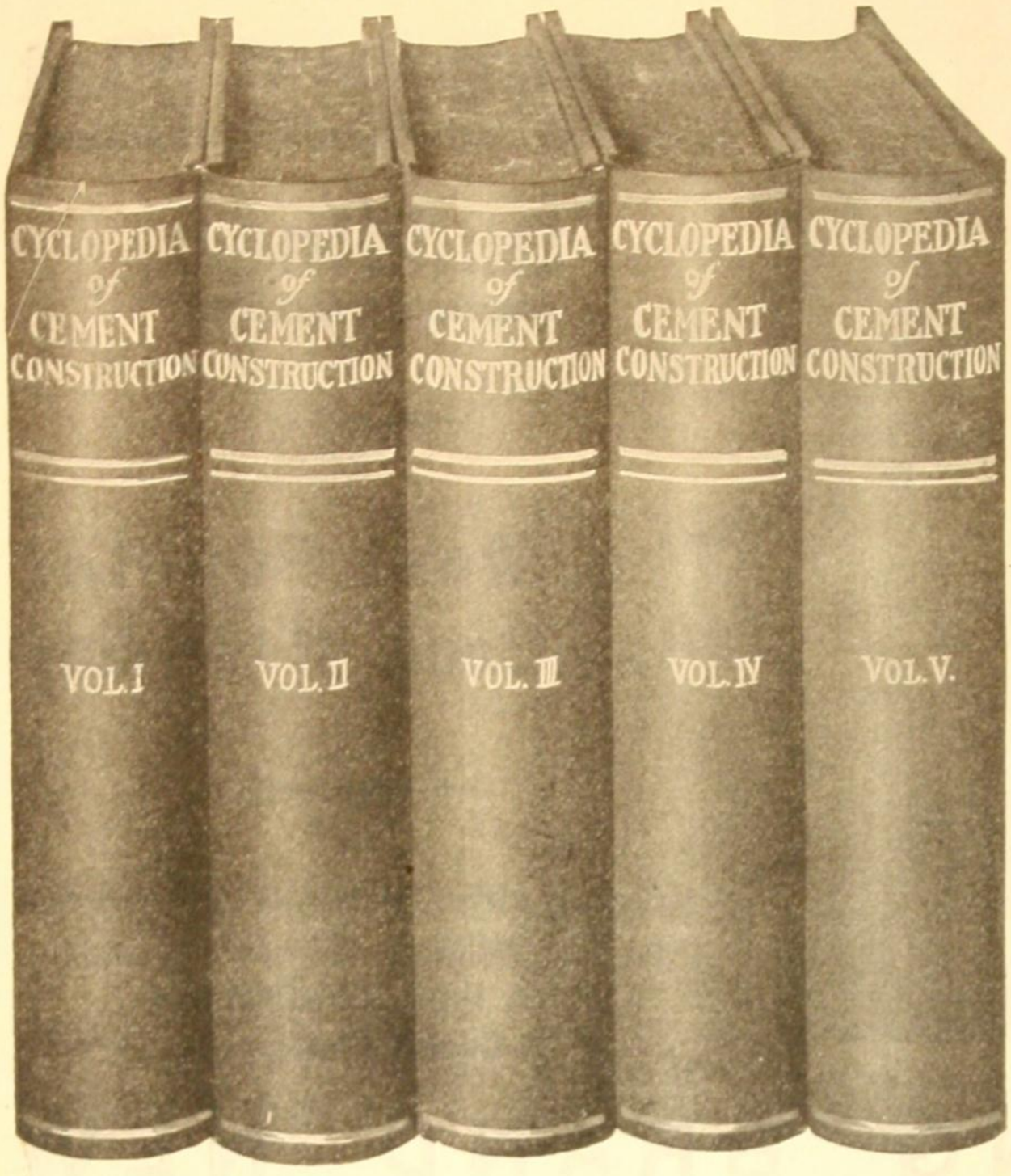

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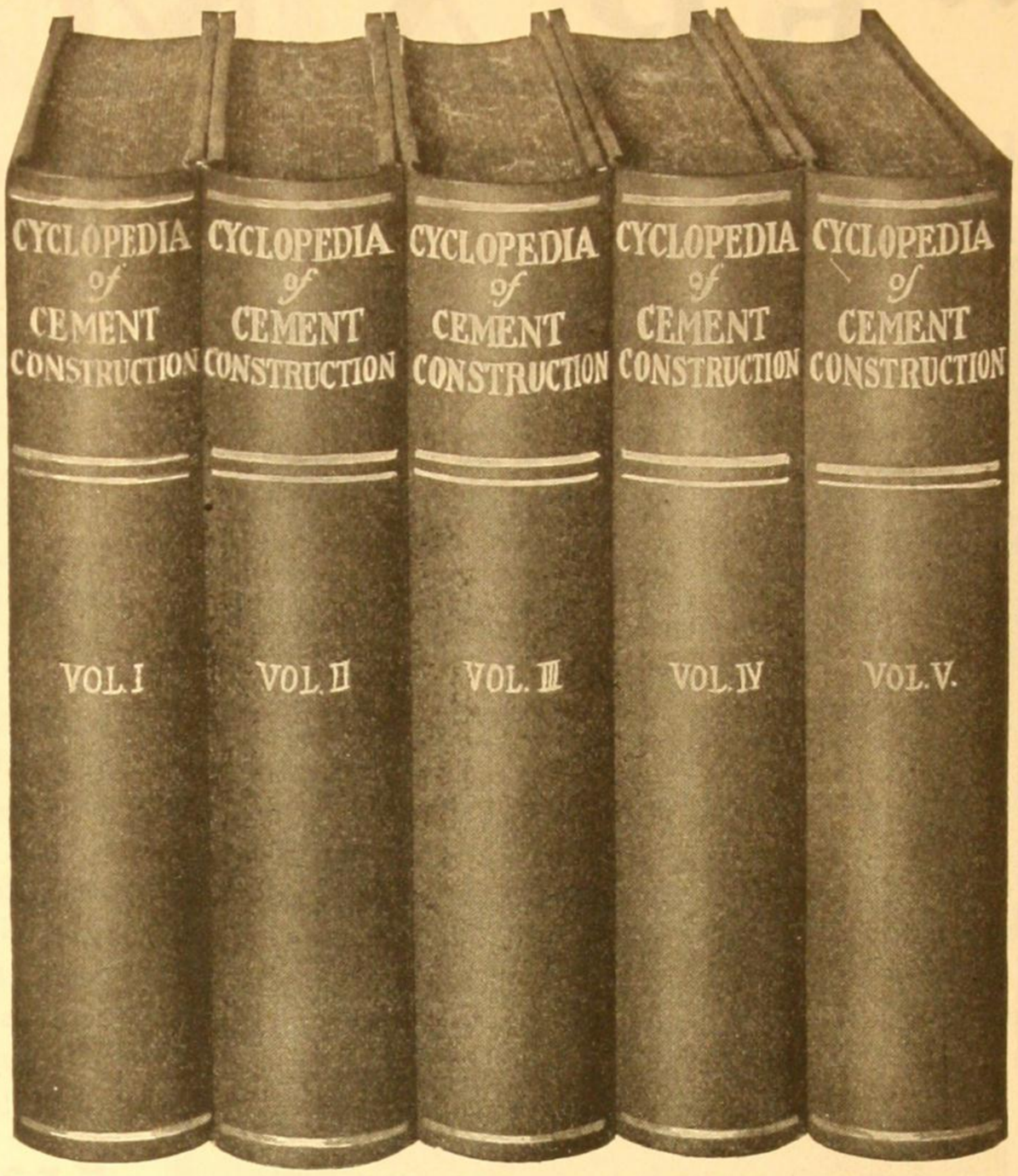

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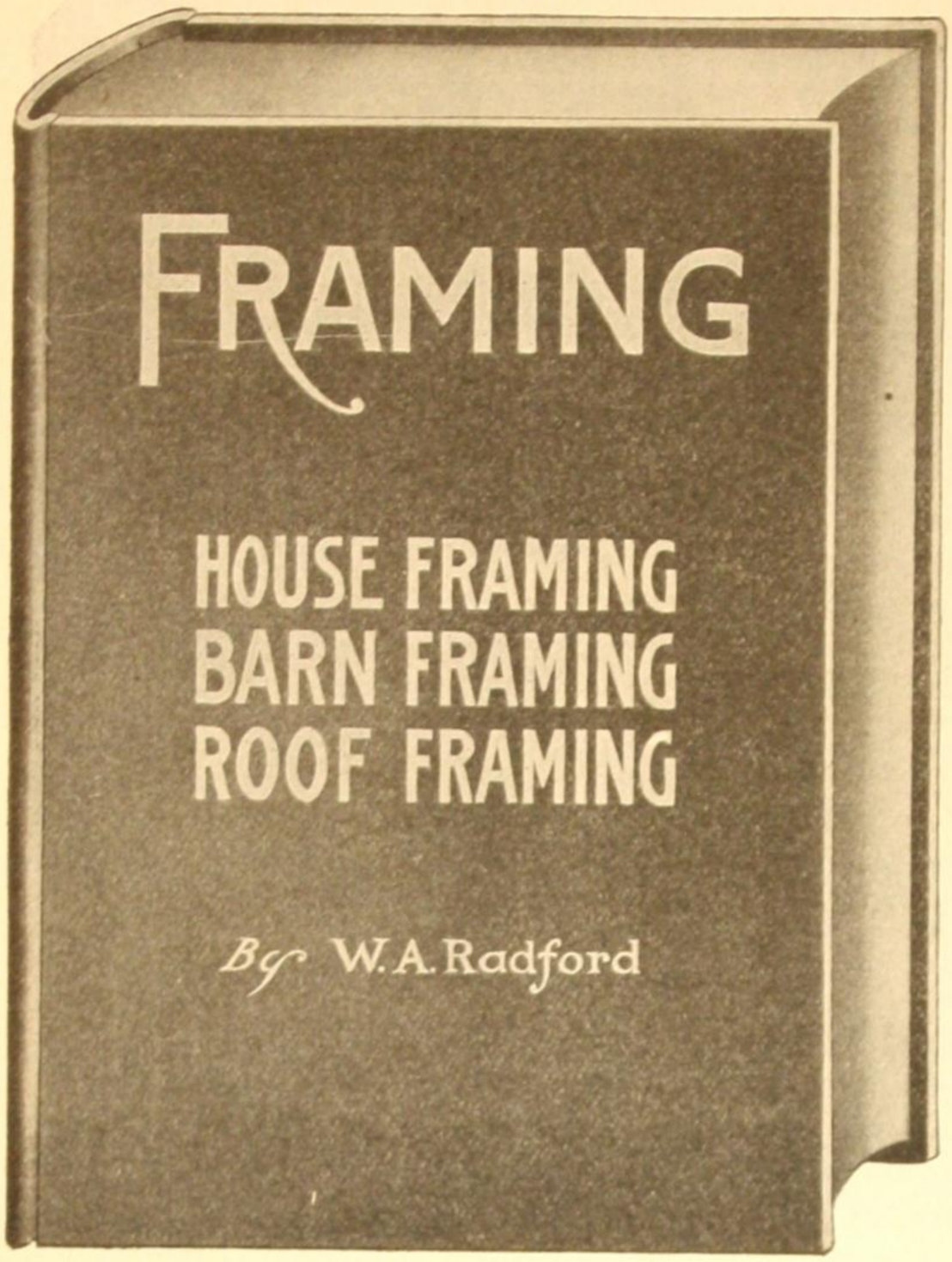

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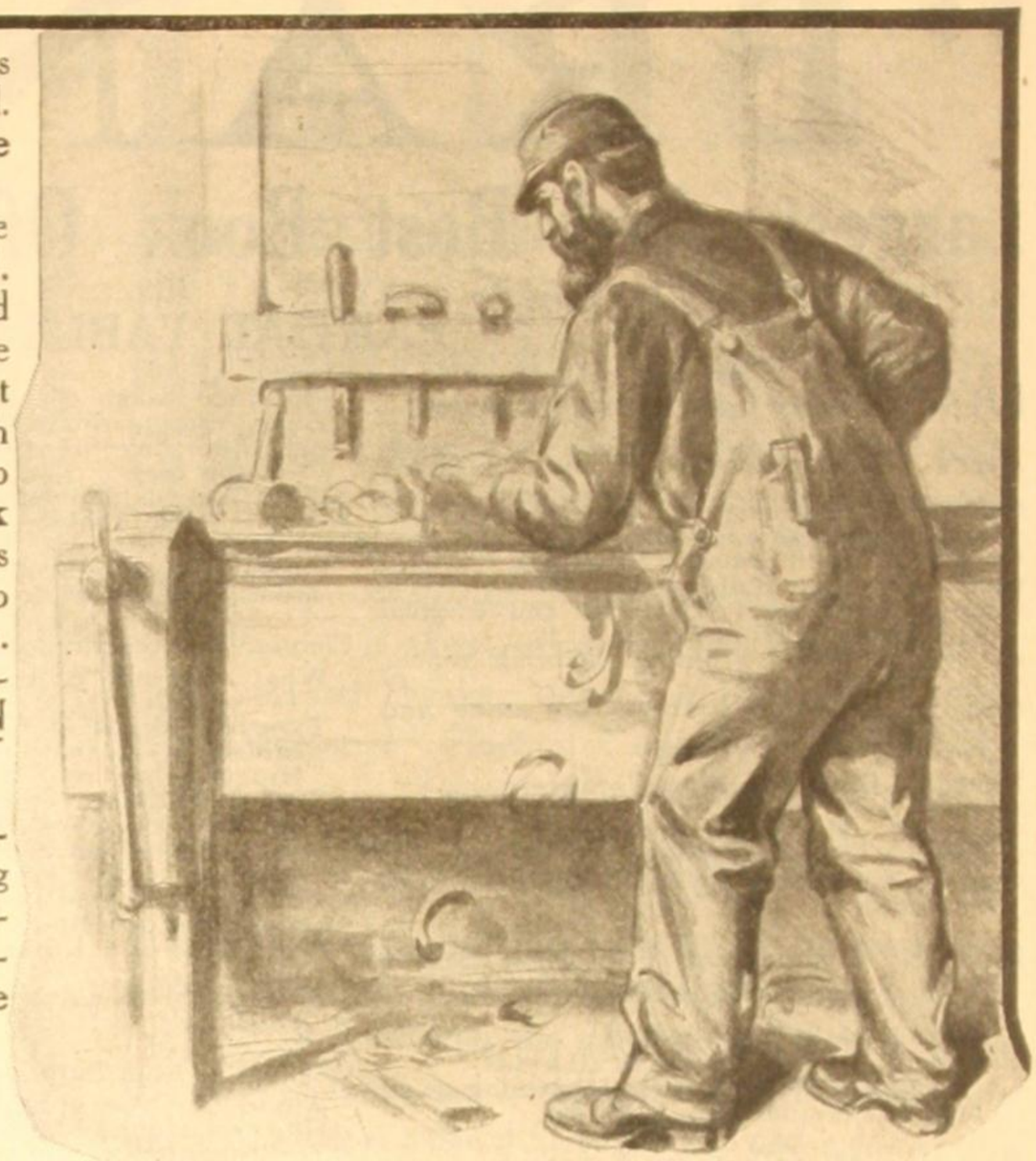

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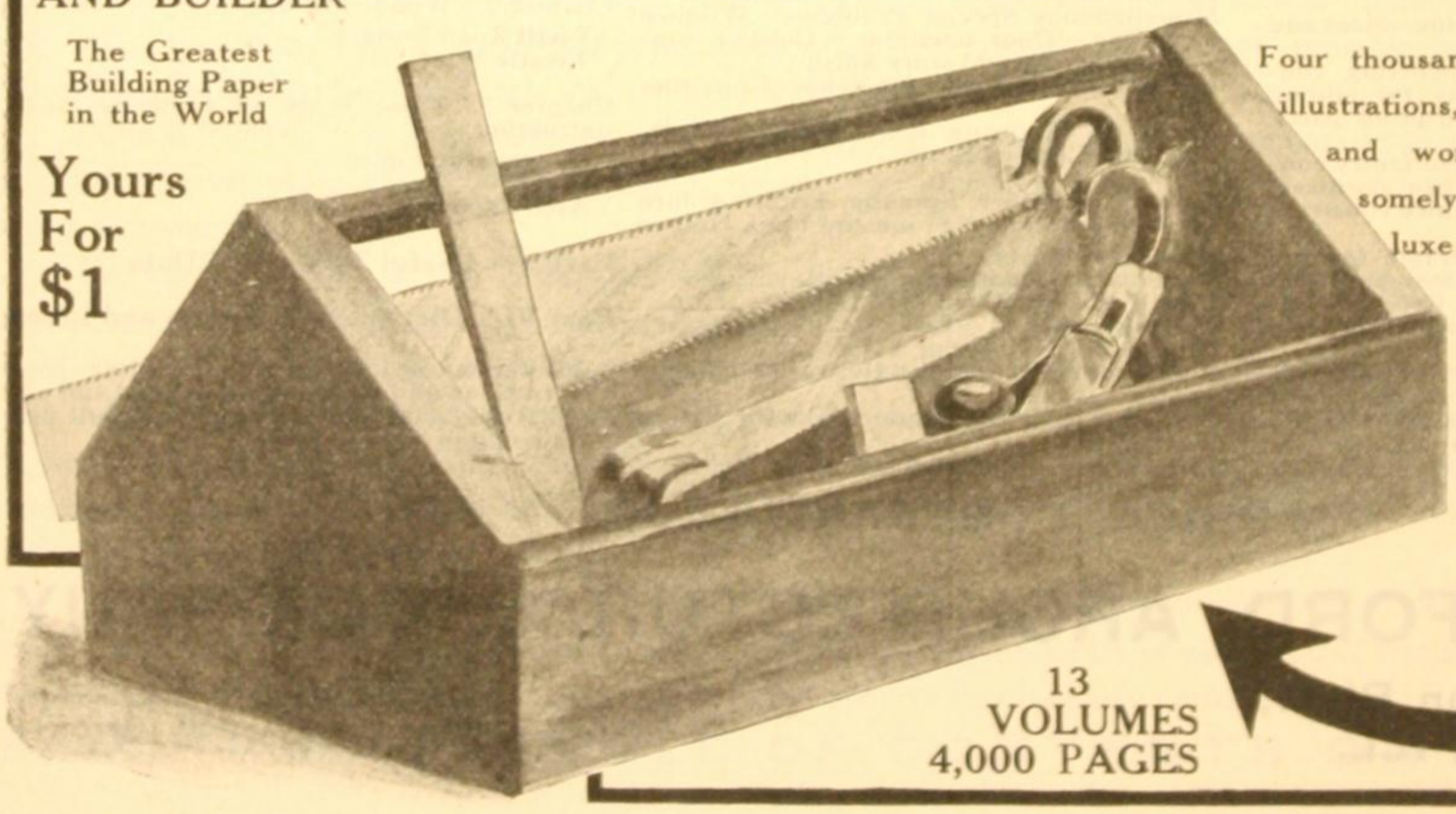

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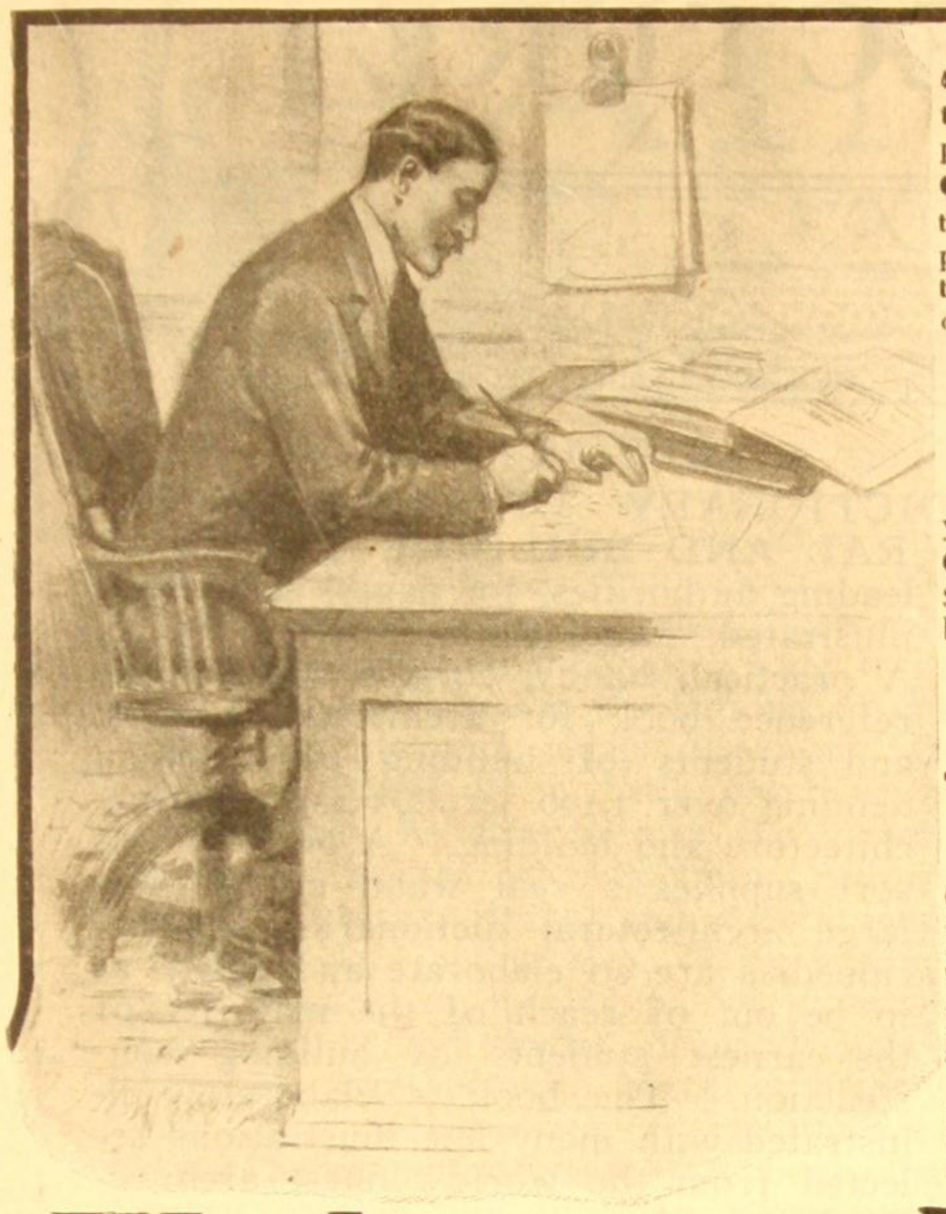

¶ The difference between **the man at the desk** and **the man at the bench** is training—the kind of training that **demands** well paid positions of dignity and importance.

¶ We don't mean by this that the **desk job is always better** than the **bench job.** We don't mean that you should change your present work. We **do mean,** however, that you must combine more of the **desk man's kind of training** with your work if you want to continue **a live factor** in your trade.

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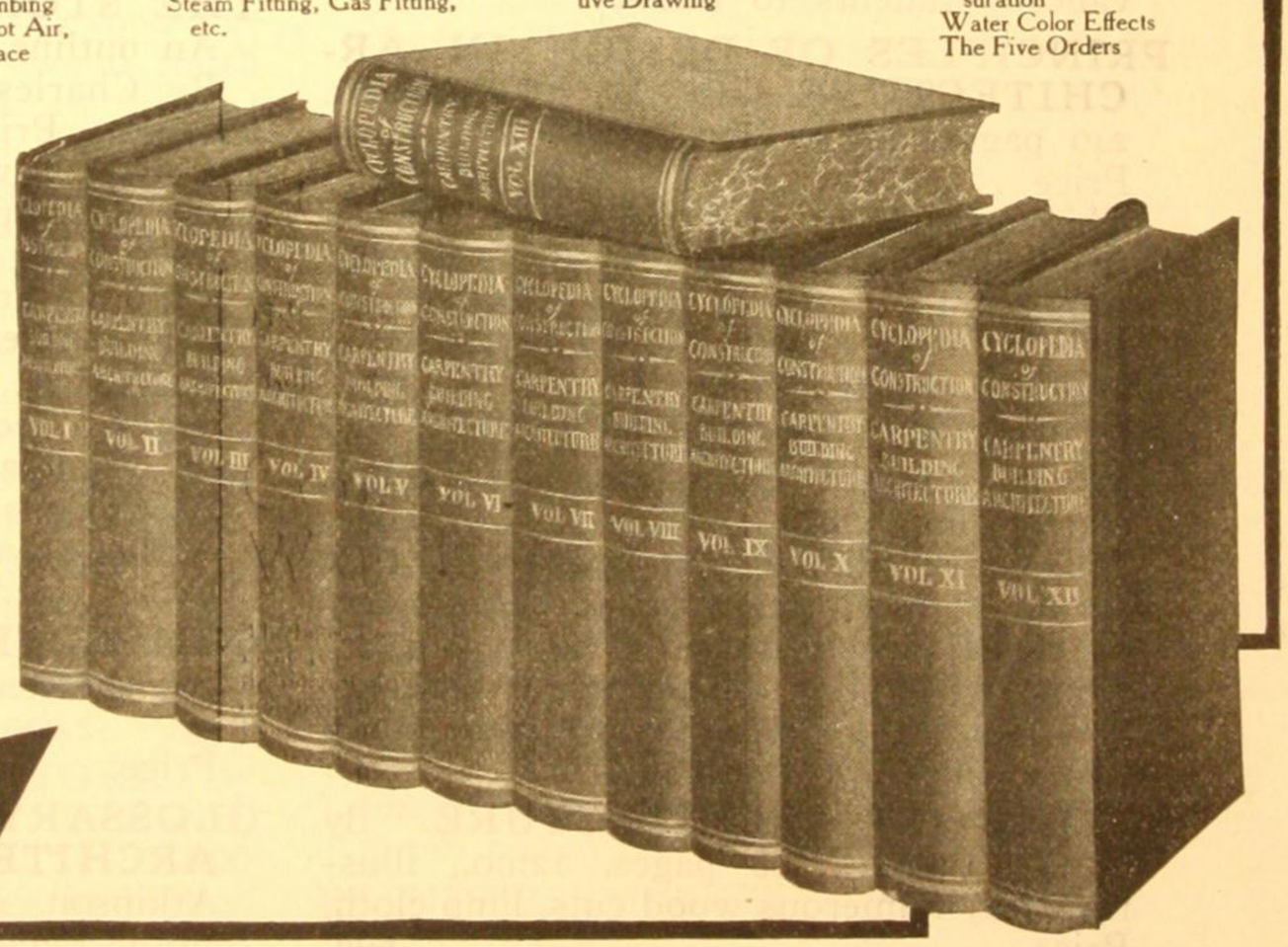

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DIRECTIONS FOR ORDERING SPECIAL PLANS.

Tear out this page, fill in the blanks below and make a rough pencil sketch on reverse side.

Each small square represents one square foot of floor space, eight to one inch. Sketch first floor plan on one-half of page and second floor on the remainder. With this information we will have no difficulty in planning your house exactly as you desire, and there will be nothing overlooked. Show approximate sizes of rooms on inside.

In case you like one of the designs shown in the books, with the exception of some changes, please give the number of the design, send a rough draft of the changes desired.

Enclosed find $10.00, for which please send me pencil drawings of floor plans and elevations of exterior of design No._____ with the changes as stated below. If the pencil drawings meet with my approval (after having made all the necessary changes), send me complete working plans, specifications, scaled drawings and details, for which I agree to pay the sum of $_____

Signed _____

NOTE—These pencil sketches will always remain the property of the architect, and must be returned without fail, as the same are of future value to him.

Is your house to be of wood, stone, brick, veneer, or cement block?_____

What is the size of your lot?_____ Is it a corner lot?_____

What corner? _____ Which way will your house front?_____
Northeast, northwest, southeast or southwest. North, east, south or west.

If the lot is not level, state what the slope is_____

Do you want brick, concrete, or stone for the wall foundations?_____

Do you want a cellar? _____ Under what part of the house_____

Do you want cross walls, or the entire basement left in one room, with posts or piers to support partitions and floors?_____

_____

Do you want the cellar 7 feet deep, or what depth?_____ Does it have to be drained?_____

Do you want an outside entrance to cellar?_____ Do you want a cistern?_____

If so, how large?_____ Are wood or brick cisterns used in your locality?_____

Do you want the cellar bottom cemented, paved with brick, natural earth or a cinder floor?_____

Do you want provision made for a furnace, steam or hot water heat?_____

Is the house to be one story, one and one-half story, or full two stories high?_____

Number of rooms wanted on first floor_____ Second floor_____

Height of first floor ceilings_____ Second floor ceilings_____

NOTE—If the house is of wood construction and full two stories high, it is economy to use 18-ft. studding, and in such a case the ceilings will be 9 ft. 2 in. and 8 ft. 4 in., or 9 ft. 4 in. and 8 ft. 2 in.

Reception hall to be_____ft. by_____ft. Woodwork to be_____

Parlor to be_____ft. by_____ft. Woodwork to be_____

Sitting Room to be_____ft. by_____ft. Woodwork to be_____

Library to be_____ft. by_____ft. Woodwork to be_____

First Story Bed Room to be_____ft. by_____ ft. Woodwork to be_____

Dining Room to be_____ft. by_____ft. Woodwork to be_____

Kitchen to be _____ft. by_____ft. Woodwork to be_____

Any further instructions regarding number, size and finish of rooms_____

_____

_____

How many bed rooms do you want on second floor?_____ What kind of wood are they to have?_____

Do you want a bath room?_____ On which floor?_____

Do you want a floored but unfinished attic above?_____

NOTE—Unless the woodwork is otherwise described by you, we will make our specifications call for Southern Yellow Pine, as this is now very popular and makes a good finish for a small cost.

Do you want a fireplace?_____ If so, in what room?_____

Do yo want shingles or slate roofing?_____ Do you want shingles, stucco or siding for vertical exterior walls?_____

Do you want two or three coats of paint on exterior?_____ Do you want any painted woodwork inside?_____

If so, where? _____

Do you want any painted walls inside?_____ In which rooms?_____

Do you want plumbing included in the specifications?_____ If so, answer the following questions:

Have you city water supply?_____ Is sewer in front or rear of house?_____

Do you want hot water pipes run to the plumbing fixtures?_____ Do you want laundry tubs in basement?_____

Do you want water closet in cellar?_____ Do you want water closet on first floor?_____

Do you want water closet in bath room?_____ Do you want sink in kitchen?_____

Do you want wash bowl in bath room?_____ Do you want bath tub in bath room?_____

Do you want any other closets or wash bowls?_____ If so, where?_____

Do you want sill cock for lawn sprinkling?_____ On what side of house?_____

Do you want a slop sink?_____ Where located?_____

Do you want an iron pitcher pump at kitchen sink for soft water from cistern?_____ Do you want a circulating boiler for hot water?_____

Do you want it in kitchen for range connection?_____ Or in basement for heater connection?_____

Do you want house piped for gas?_____ Wired for electric lights?_____

Any further instructions on any point not above referred to_____

_____

_____

House to be built for_____

On Lot No._____ Block No._____ City_____

County_____ State_____